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MEDICINE IN FICTION IN THE LAST HUNDRED YEARS.

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Brisbane.

WHEN I began this paper I was impressed by a sentence in one of Conan Doyle's "Short Sketches," that it would be interesting to make a list of diseases used by novelists. From this point I found that the subject grew very rapidly, and to have discussed medicine in literature during the past hundred years would have taken many papers such as this.

The last hundred years happen to be a peculiarly appropriate period. Laennec, who comes so charmingly into Kipling's story of "Marklake Witches," the founder of auscultation and much of our knowledge of diseases of the lungs, died in 1826. Like many doctors, he died from a disease which had been his own specialty. In 1828 was born Villemin, who first proved to the satisfaction of science that consumption was an infectious disease, and a year earlier was born Lister, who made modern surgery possible, while the great Victorian age of literature may be said to have begun with the death of Scott in 1832 and the contributions of a young undergraduate called Thackeray to a university magazine in 1829.

I intend to treat very shortly, I fear, of medicine as shown in fiction of a century or a little less ago, contrasting it where possible with the medicine of the present day, to take a glance at some of the medical figures in the gallery, and to undertake finally a very short discussion of the present day novelist's attitude towards medicine compared with that of his earlier fellows.

Birth.

In the first place, to begin at the beginning, there is no medical matter of greater importance than birth. "A sound general practice with a good midwifery connexion" is still the backbone of medicine as a profession and it is at births that many of the medical figures we meet are introduced.

It is at David Copperfield's birth—and for a first confinement and a somewhat weakly mother this seems to have gone off very well—that we meet Mr. Chillip and are also given the detail that David was born with a caul—a charm which has now no longer the esteem it once had, although there were people who trusted its virtues even ten years ago. Naturally the Victorians did not go into details of confinements—such detail as Arnold Bennett gives in the "Old Wives Tales," of the birth of Cyril Povey, would have been quite impossible—but there was very free description of the incidents associated with such events. Mrs. Kenwig's confinement is an instance, from Mr. Kenwig carefully muffling the knocker, to the information that the new baby was beginning to eat like anything. Obstetrics must have been a grim business in those days. There was no chloroform in obstetrics until Simpson, in face of bitter religious principle, introduced it in 1847, and not infrequently the mother of the child died from sheer exhaustion, as did Oliver Twist's mother or the unhappy Mrs. Barton in Mrs. Gaskell's story. Here a cotton operative's wife, worn out by privation, bad housing and grief, dies soon after the onset of labour, apparently from sheer exhaustion. But Mrs. Dombey's is a case which shows that this exhaustion, fatal in spite of all that could be done, might occur in the wealthy as well as in the poorest. Not even Dr. Pilkins and Sir Parker Peps could enable poor Mrs. Dombey after her hours of unrelieved agony, "to make an effort"; there is apparently no question of hæmorrhage, sepsis or other complication, simply exhaustion. When pregnancy complicated another disease, the outlook was even worse, and the death of the unhappy Mrs. Clive Newcome is a ghastly picture of pregnancy in a consumptive, with its exacerbation of the condition and the inevitable result. Mrs. Clive has a heavy enough hardship in her mother and it is probable from her previous obstetric history that she was an innocent sufferer from Clive's very mild wild oats, but the phthisis was the final blow. Kipling says of the old three volume novel: "We never talked obstetrics when the little stranger came," but towards the end of the century things were changing. Eustace Morven's brother in the "Gay Dombeys," writing in 1880, discusses puerperal sepsis and antiseptics with the scepticism which unfortunately characterized too many of the medical profession; but let us remember here that it was that great literary artist, Dr. Oliver Wendell Holmes, who was the first in America to have the insight and courage to declare the contagiousness of puerperal fever. His essay of 1843 is a medical classic and its style has always reminded me of "The Mystery of Marie Roget." I have already mentioned the frankness with which Arnold Bennett describes Constance Povey's (*née* Baines) confinement in the "Old Wives Tale," but I am inclined to think myself that Conan Doyle's "Curse of Eve" is the best account I know.

Children.

From birth let us pass to children; and here the tale is equally melancholy. Dickens suggests a little unkindly that Oliver Twist survived because he was neglected, that had he had a bevy of doctors, nurses and female relatives he would probably have been buried with his mother; at least the workhouse surgeon's feeding instructions—"Give him some gruel"—show that in infant feeding at least poor law authorities have advanced. Among the poor, infant mortality was dreadful. The unhappy twin babies in "Mary Burton" are only samples of what all too commonly occurred when the children had all the care and love that a working class mother could give. Here is the description in Disraeli's "Sybil" of what happened to the unwanted infant. She put her infant out to nurse; that is to say, she paid threepence a week to an old woman. The expense is not great; laudanum and treacle administered in the shape of some popular elixir, afford these innocents a brief taste of the sweets of existence and, keeping them quiet, prepares them for the silence of the grave. Infanticide is practised as extensively and as legally in England as it is on the banks of the Ganges; but there are infants that will defy even starvation and poison, unnatural mothers and demon nurses. At two years he was sent ot to "play" in the streets in order to be run over. Of the others some were crushed, some were lost, some caught cold and fever, crept back to their cellars and garrets, were dosed with Godfrey's cordial (laudanum and treacle) and died in peace; he alone survived. Even among the very well-to-do the infant mortality was distressingly high. Lady Arabella Gresham, in "Dr. Thorne," loses four of her ten children, in spite of the best medical attention, watering places and gallons of medicines. Much, no doubt, was due to artificial feeding among the better classes. Lady Arabella was quite unable to nurse her son (Trollope remarks bitterly: "Lady Arabellas never can"); he was lucky in having a wet nurse. Wet nurses were not uncommon; sometimes they were "respectable married women" who were perfectly satisfactory, like Paul Dombey's Mrs. Toodles, sometimes single girls, like Master Jack Easy's, who'd had only a little one and who might be less satisfactory. Sometimes, as Kipling hints—"a crew of missing heirs, they shipped as able bastards till the wicked nurse confessed"—the babies were changed and trouble ensued. Mark Twain's story of "Puddenhead Wilson" has this as its central feature, further complicated by the fact that here one child is white and the actual owner of the other almost white child.

No doubt the Micawber family had many disadvantages and handicaps; but at least the twins were breast fed, though Mrs. Micawber knew nothing of modern four-hourly feeding rules. Mrs. Kenwigs,

too, nursed her son, though she required four pints of malt liquor daily to sustain her.

The children, as they grew up, had all the dangers of infectious diseases and these were far more dreaded then than they are now. In "Framley Parsonage" Trollope says that an English county lady of the right class will do anything for her neighbours except bring infections into her own nursery. Measles and scarlet fever and whooping cough were the most dreaded of children's diseases among the better classes. Vaccination had removed the dangers of small pox, though a generation earlier Mrs. Bute Crawley had nursed her own children with it.

We first make Ethel Newcome's acquaintance at Brighton, whither they have all flown for the eldest son (Clive's little friend Alfred) to convalesce after measles, and a very sick and weakly state it seems to have left him in. The dangers of these diseases were, of course, greatly increased by the dread of fresh air which one finds so constant in all the older novels.

Master Alfred Newcome's treatment at the seaside did comprise ass's milk, jelly, soup and custard, but no sun bathing nor sea bathing, nor any of that favourite prescription of an old teacher of mine for delicate children: Take him away to the seaside and make a savage of him for six weeks.

Paul Dombey went out always in a carefully closed carriage, well wrapped in shawls and rugs, and I am inclined to think he died of acute tuberculosis. Boys had a better chance than girls; at least games and sports took them outside; and Tom Brown, with football, cricket, wrestling and bird's nesting, was better off than his sisters, who, no doubt, at best played croquet or graces or perhaps, like the Miss Pontos, dragged a garden roller, as "callisthenics" (though I can remember a delightful little letter of Thackeray, accepting an invitation to play trap bat and ball with three young ladies in crinolines, whom he has drawn with his usual vivid life). Nor is there any mention in the list of Angelica's accomplishments of her skill in any game or exercise. How different from a modern prince or princess! Hence we see that the grim spectre always hovering over the young people of the better classes one hundred years ago was tuberculosis, most probably of the lungs, but probably of other organs too. Dora Copperfield, Little Nell, Rosie Newcome, Frank Graham in "Holiday House" are only a few examples. I do not know why the older novelists chose consumption as a mode of exit for their unhappy puppets, except for its frequency, and they are all ready to ignore the cruelty so often present in the disease.

Dora's gentle slipping down hill does indeed occur in tuberculosis, but it is apt to be interrupted by bouts of difficult breathing, pleurisy, indigestion and hæmorrhages, which make tuberculosis one of the most heart-breaking of diseases to treat. Certainly those older novelists emphasized the two great features of the disease, namely, eternal optimism and the gradual decline of the consumptive, the very features which make it so difficult to treat; but there is a careful glossing over of other less pleasant points. Little Nell, for instance, never coughs once that I can find and seems to have no pain at all. All, moreover, are able to deliver long discussions on family or religious topics. Listen to Frank in "Holiday House" the day before his death (page 309):

> Tell Grandmamma, that though my days have been few upon the earth, they were happy. When you think of me, Uncle David, after my sufferings are over, it may well be a pleasing remembrance that you were always the best, the kindest of friends. Oh, how kind! But I must not, cannot speak of that. This is my birthday, my last birthday. Many a joyous one we kept together, but those merry days are over, and these sadder ones, too, shall cease; yet the time is fast approaching, so welcome to us both:
>
> When death-divided friends at last
> Shall meet to part no more.

How different from the picture that Conrad gives in the "Nigger of the Narcissus"!

Tuberculosis.

Tuberculosis in its other manifestations was common enough. Dickens has two examples in persons by name Tiny Tim and Jenny Wren, and the former's death would have been by no means unexpected to any physician of these days. A tuberculous joint, a flare-up into a generalized condition, such seems to have been a very common course. In "Nicholas Nickleby" there is a horrid hint of the presence of tuberculous joints among Mr. Squeers's pupils—"deformities with irons upon their limbs." Think of the dreadful state those limbs must have been in—splints uncorrected for growth and wear or change in the condition or which they were fitted. Is it any wonder that occasionally they died under the *régime* of dirt, brutality and semi-starvation, with only Mrs. Squeers's brimstone and treacle or Mr. Squeers's open air treatment. There is, too, Tim Linkinwater's little friend, the hunch-backed boy in number 6, who struggled to keep his flowers going and to all Tim's offers of help could answer "nothing." It is a perfect little medical cameo. There is a mate to it, though much later, in a short story of Mrs. Ewings, "A Bit of Colour," the consumptive dying in a London attic cheered by the sight of the plant his friends had brought him home from a unique day in the country years before.

Above all, it was the hopelessness of consumption that was so terrible. Consumption, a decline, and the end were but a question of time. Contrast Giles in G. B. Stern's "A Deputy was King."

Typhoid Fever.

But if there was tuberculosis as a slowly crushing enemy, there were other diseases, the result of their ways of life, which were especially waiting for the young adult. Even in the upper classes typhoid was common enough. Pen's illness was almost certainly typhoid and it is probable that all the long continued fevers were typhoid.

When one thinks of the sanitation, or lack of it, both in London and the provinces, it is remarkable

that there was not much more typhoid. Take such simple matters as baths for instance. Pen and Warrington create much hostility by installing a shower bath at the Temple, though, to his credit be it said, the Reverend Charles Honeyman had one in his lodgings. And bathrooms were not unknown; the house Colonel Newcome took in Fitzroy Square had one, but in very bad repair. There seems to have been not much in the way of baths at Rugby in Tom Brown's day, and I can remember a school story—the author I do not know, but it was called "Crofton Boys"—in which the washing question was even more definitely settled. The small hero on his first morning in the dormitory washes first his face and hands, an action which is received in silence, he then washes his feet, an action which evokes groans and shouts of disapproval. He is then told by his elder brother that such ways are well enough at home, but at school he must be satisfied with washing his face and hands each morning, perhaps a bath, but at least washing his feet on Sundays. Dick Swiveller's long illness, too, was most probably typhoid of the ambulant type. The most remarkable feature of Dick Swiveller's illness was that the Marchioness, apparently single handed, nursed him for three weeks, and no word of a bed sore! It certainly has enormously increased even my previous great admiration for that admirable young person.

Incidentally one may note here that both the Marchioness and the Infant Phenomenon are examples of dwarfism induced by poor feeding and other unsuitable conditions. Quilp, on the other hand, was probably a sufferer from very severe late rickets, that is, the type in which the disease continues until the third or fourth year. Miss Mowcher, in contrast, was an achondroplastic dwarf.

Typhus Fever.

But if the typhoid and tuberculosis waited for the young adults of both classes, among the poor there was a disease which has now fortunately almost disappeared—typhus. It was recognized as a disease of slums and prisons. It was in fact "jail fever" and so one of the few references to it is in "Our Street," where Thackeray speaks of some children as:

> The spawn of the alleys about Our Street. Only the parson and the typhus fever ever visit those mysterious haunts, which lie couched about our splendid homes like Lazarus at the threshold of Dives.

Disraeli, too, in "Sybil" is even more emphatic.

> The pest which never quitted the nest of cellars of which he was a citizen, raged in the quarter with such intensity that the extinction of its swarming population was menaced. The haunt of this child was peculiarly visited. All the children gradually sickened except himself, and one night when he returned home he found the old woman herself dead and surrounded only by corpses.

Typhus is essentially a disease of dirt, overcrowding and, above all, vermin; for it is by the agency of the body louse (an animal never mentioned in Victorian literature) that the disease is actually transmitted. Disraeli obviously took much of "Sybil" from Chadwick's report on the sanitary conditions of the labouring population of Great Britain, presented to Parliament in 1842. Chadwick, with the help of Dr. Southwood Smith, helped to make Britain the world's leader in sanitation. These reports are interesting in that they aroused Dickens to write the following letter to Smith, in which he follows up a former letter suggesting a pamphlet on the matter.

> Reasons have presented themselves for deferring the production of the pamphlet. I am not at liberty to explain them further just now; but rest assured that when you know them, and see what I do, and where and how, you will certainly feel that a sledge hammer has come down with twenty times the force, twenty thousand times the force, I could exert by following out my first idea.

What was this sledge hammer? I do not know, but it is remarkable that the two novels which deal best with working class conditions at this time are "Mary Barton" and "Sybil." Nothing by Dickens. Wilkie Collins, in "The Woman in White," makes Miss Halcombe suffer from typhus. How she caught it is not obvious.

Cholera.

There is another disease of dirt and overcrowding which was not constantly present in England, but made its appearance in epidemics—cholera. There was an epidemic in 1839 which was threatening just at the time of Lydgate's retirement from the New Hospital, broken in spirit and fortune, and another in 1852. It was around this last that Kingsley wrote his curiously uneven novel, "Two Years Ago." In it he gave one or two glimpses of the disease itself, writing naturally with the restraint of his period, but the writing is that of one who had seen what he was describing or hinting at. (This restraint is nowhere better compared with the present day attitude than in Thackeray's description of "taking the waters" in the Hicklebury's and Harry Johnston's account in "The Veneerings"). It was little enough wonder that the poor developed horrible diseases from their food. Here in "Sybil" is a hint of the sort of food a worker's family could buy in the 'forties; one woman says:

> I have two children at home ill from their flour. One is used to a little white clay, but when they lay it on thick, it's very grave.

Or later, one workman describes with pride how well living-in apprentices fare in a certain master's house:

> Never had horseflesh the whole time I was with him; they has nothing else at Tugford's; never had no sick cow except when meat was very dear. He always set his face against still-born calves; he used to say he liked his boys to have meat that was born alive and killed alive. By which token there was never any sheep what had bust in the head (bladder worm in the brain) sold in our court. And then sometimes he would give us a treat of fish, when it had been four or five days in town and not sold.

Kipps and Mr. Polly sometimes grumbled at the food they got in the drapery emporia of their apprenticeship, but nothing equal to this.

But if cholera is a disease of dirt and food infection, it seldom remains confined to one class, and in "Two Years Ago"—the general low grade of

sanitation in the town was quite enough to give the disease a good hold—all classes suffered. Dysentery was probably pretty common in England before sanitary reform, but it is not mentioned by novelists, though Thackeray uses it to kill off the Dowager Countess of Castlewood, and Colonel Newcome mentions it among the diseases of India.

Pneumonia.

A disease as common then as now and yet not much used by the novelist, is pneumonia. "Pneumonia," said Sir William Osler only a few years before his own death from it, "is the friend of old age"—a remark borne out by Colonel Newcome. His last illness is a perfect clinical picture of pneumonia in old age: the onset with fever and chill, the severe course, rapid improvement to a certain extent and a complete inability to pick up further. I shall have more to say later in contrasting his illness with that of Lord Raingo, a century later.

The illness of Rose Maylie, on the other hand, is an example of the acute course lobar pneumonia may follow in young adults: Acute onset, rigors, high fever, delirium and sudden termination by crisis, life despaired of one day, the next, crisis and recovery.

George's Uncle Teddy Ponderevo, worn out by worry, overwork, exposure and fear, shivers, becomes feverish, coughs and becomes gravely ill, dying in a few days, with a somewhat sordid death-bed scene.

Probably everybody can think of other cases of pneumonia. Probably all the short fevers of novelists, quite certainly all fevers terminating by crisis, are pneumonia.

Heart Disease.

One disease missing from the common illnesses of young people is heart disease. Heart disease is common enough as a disease of later life, especially as a cause of sudden death. Helen Pendennis is a very good and natural case in point, but among young people it is scarcely mentioned. There is an exception, a rather notable one, in that amazing jumble of fact and fancy, sentimentalism and accurate description, "The Diary of a Late Physician," by Samuel Warren. This gives one story, "Death at the Mirror," of a young woman who suffers from heart disease, and in spite of the physician's warnings insists on going out to parties and the like. Finally, while doing herself up for one such party—and from his description it would seem that the modern girl had little to teach her grandmother in these matters—she collapses and dies. The whole description is accurate and makes it obvious that she was suffering from rheumatic endocarditis, and the condition indeed ended, as it so often does, with the plugging of some artery to a vital area—heart, lung or brain—and death. Probably heart disease was often unrecognized. Poor Robert Burns for years has lain under the slur of death from alcoholism. It is only recently that Dr. Crichton Browne has shown that his death was really due to ulcerative endocarditis, much aggravated by the bad medical treatment he was advised. Still many young people would have made very "bonny deaths" like the little Belfast boy, if dying of heart disease, and much opportunity for edifying discourse and much place for weeping relatives. In "Middlemarch" old Featherstone dies of this slowly progressive (and commoner) form of heart disease, with much that has bearing on the novel's action.

Apoplexy.

But among older people there was one very real condition that was very common—strokes or, as they were often called, apoplectic "fits." It is probably this that leads to so much confusion over the word "fit." As a result of severe emotion the victim would fall down foaming in a fit. The wretched husband of the woman whose death leads to Oliver's first professional visit with Mr. Sowerberry, is an excellent example; he falls down swearing, raving and foaming at the mouth. Of course, an epileptic may easily bring on a fit through emotional stress, but these people are not epileptics, but normal individuals. Possibly the condition was hysterical. But an apoplectic fit or stroke was a different matter. With the brain injury occurs disturbance of function of that area of the brain; usually the damage is in a motor area and paralysis of all degrees ensued. The Honourable Mrs. Skewton affords an excellent example; and Mr. Baines, in the "Old Wives Tale," is a very well worked out and detailed study of a hemiplegic. In any individual with high blood pressure such a hæmorrhage might easily occur at any time of emotional stress or strain; hence the anxiety with which Mr. Sawyer and Mr. Allen hovered on the fringe of the great editorial conflict at Towcester, ready to bleed the first man who went down.

Bleeding was then the very common and, indeed, still is very sound treatment for apoplexy; and the tortoise shell lancets which the famous graduates of Guy's had ready on this occasion were the first instruments to which a surgeon of the time would turn. Apoplexy is the result of high blood pressure and high blood pressure is too often the result of over eating and over drinking. No one will need to be reminded of the heavy drink of those days. Clive Newcome, while still at school, slips out and brings back two bottles of prime old port for a dormitory supper; and Mr. Pickwick absorbs too much at lunch and falls asleep in a wheelbarrow. Acute alcoholism was not uncommon. The Scatcherds, father and son, in "Doctor Thorne," are on the whole very fine pictures, but alcoholic mental disease must have been fairly common, too. Tittlebat Titmouse, in "Ten Thousand a Year," Samuel Warren's other masterpiece, ends his days in a happy delusion of greatness and prosperity, easily moved to tears and growing more and more helpless under a *régime* of brandy and water.

There is another effect of chronic alcoholism which I cannot place in modern medical experience—spontaneous combustion. You all know the account in

Dickens, and there is another, and I think an even better one, from Marryat's "Jacob Faithful."

Mr. Casaubon, in "Middlemarch," is almost certainly a sufferer from arteriosclerosis and dies from apoplexy. Lydgate diagnosed the condition as "fatty degeneration of the heart." It is far more likely that the sequence was arteriosclerosis, greatly enlarged heart, heart failure and perhaps angina, and very probably a cerebral hæmorrhage or a blocking of a cardiac vessel to close the picture. George Eliot's medical knowledge is good and her details are usually exact.

Gout.

Secondary only to high blood pressure or perhaps one of its causes and a sequel of alcoholism, was gout. Dozens of well-off people had gout. It did not merely distort fingers and toes, load their knuckles with chalk stones, but struck inwardly at heart and brains and kidneys.

Nervous Conditions.

But if the men had gout, the women had nervous disturbances of a type fortunately seldom seen now. Any emotional occasion was met by a faint or a swoon. The "Late Physician" recalls case after case. Any of Thackeray's heroines, except the great Beatrix, would swoon to order and it was by swooning that Mrs. Kenwigs reacted to the terrible threat of Mr. Lillyvick's withdrawal from her party.

Even Morlena, you will remember, swooned on hearing of his marriage and came out of the swoon only when she found no one was noticing her. Closely akin to swooning was hysterics. Mr. Pickwick's unfortunate visit to Miss Tomkins's boarding establishment for young ladies is a splendid example—swooning and hysterics combined—probably less swoon than hysterics. Contrast Henry in "The Skipper's Wooing." There were also hypochondriacs at this time, as much as there are now, and if anyone wants a perfect piece of medical portraiture, let him turn up "A Couple Who Coddle Themselves" in sketches by Boz, and he will find a description of hypochondriacs as so many doctors know them and groan under them. The fussiness about details, the strange aches and pains for which no basis can be found, the diligent study of medical books, the fear of colds, the fads of clothing and food, above all the wretchedness in the morning, with the improvement as evening comes on, all are carefully noted and set out. It is a curious point that in this early sketch Dickens is far more complete and accurate than he is in some later works, the deaths of Paul Dombey and Little Nell for instance.

Other nervous diseases were, of course, made use of at times, and naturally insanity is frequently mentioned, and here is a subtle difference between Dickens and Thackeray. Take examples of failing intellect from Thackeray, say, Colonel Newcome in senile dementia and Plantagenet Gaunt Gaunt, heir to the Marquis of Steyne, in "Dr. Birch," an example of feeble mindedness.

On the other hand, take Chuffey in "Martin Chuzzlewit," or Mr. Dick.

Was it Thackeray's own domestic misfortune that made him describe his characters with nothing but an extraordinary kindness and sympathy? He starts out to make fun of poor Plantagenet, tries again at the end, after breaking down helplessly in the middle, and leaves us with something very much approaching respect for the poor creature.

As for the colonel, it is nowadays the fashion to sneer at him, but in the past twenty years what character had appeared in fiction to equal him for pathos and dignity?

But Mr. Dick, in spite of David's fondness for him, is still a source of amusement. King Charles's head and the memorandum have passed into our language as a joke, while poor Chuffey, although at the end he does triumph a little, is yet made out such a poor baited creature that it is impossible to have any higher feeling than pity. The attitude of the ordinary man in the street towards lunatics is fairly well shown in "The Madman's Manuscript" that Mr. Pickwick read; its reference to straw and chains shows the only treatment thought necessary for the poor creatures. It was still possible to have objectionable people shut up in asylums on pretended charges of lunacy; it was done in "Peter Simple," you remember, and also in "Hard Cash." There is no example that I can remember of the light hearted treatment of insanity of Storer Clouston in "The Lunatic at Large."

Drug Addiction.

There is no mention of drug taking among the better classes, apart from alcohol, one hundred years ago. De Quincey and Coleridge had few followers, but from Mary Barton we learn that opium was taken freely by the half starved (or wholly starved) working classes in order to check the gnawing of hunger and enable them to endure a little more easily the misery of their surroundings. Alcohol was the more common form of drugging, however, in all classes, though so curiously rare among women that its occurrence is a matter of special mention; some of the most lurid of the "Late Physician's" pages deal with alcoholic women. Here, too, occurs the question which rereading of "The Newcomes" recalls: Was Mrs. Mackenzie a secret alcoholic? Personally I should think it not at all unlikely. I do not know if any of you have ever had any dealings with alcoholic women. If so, you will recognize the deceitfulness, the alternations of sweetness and fury, the cunning to achieve their own ends and the intense self-centredness which Mrs. Mackenzie shows so often. Those blind, unreasoning and outrageously crude bouts of fury, too; they were almost beyond sanity and to me at least strongly support the view that they found inspiration in the brandy bottle.

Tropical and Military Diseases.

Another striking omission is the lack of reference to tropical and military illnesses. Thackeray, of

course, brings them in, especially in his description of the "nabob class," but then one must remember that Thackeray, though he might not belong to one of Kipling's half dozen "Indian" families, yet came of a "service" family with Indian traditions. Hence came his intense interest in India and in soldiers. Colonel Newcome spoke of fever, dysentery and cholera as the daily experience of life; and if Thackeray makes fun of military snobs, yet he has an obvious admiration for the better type of British officer. Nowhere do we get such kindly and sympathetic pictures of the British Army as in "Vanity Fair" until we come to the dainty miniatures of Mrs. Ewing.

Malaria indeed was not unknown in England, and in "Martin Chuzzlewit" Dickens gave a most gruesome picture of that disease as seen in the swamps of Eden, though I am not sure that Martin and Mark did not really have both typhoid and malaria, a dreadful combination, not definitely separated out into two entities until Osler's time at the Johns Hopkins Hospital forty years later.

Even though Waterloo was only twenty years over and the Crimean War and Indian Mutiny at their doors, there is hardly a reference to these wars in Victorian fiction. In "Two Years Ago" there is, I think, one of the very few instances of a lady going out to help Florence Nightingale in the Crimea; and yet we know that many of them did go. There is, too, but little hint of any nervous disturbance after the wars of this period. One of the few who suffered from "shell shock" or war shock, is Amelia Osbourne, who suffered much more from shock than from fever.

Indeed there are very few references to post-war nervous disturbances until we come to the present war.

Galsworthy, in "Fraternity" introduces an ex-South African soldier who had received a head injury with resulting mental disturbance—probably a typical case of shell shock. Yet "soldier's heart," a nervous disturbance in most cases, was well known in the American Civil War. Frankau's "Peter Jackson" is a very well done study of shell shock. Both Peter and his brother-in-law are very real people, obviously taken from life.

Mr. Kipling's shell shockers seem most curiously unconvincing, if you except the compulsion neurosis of his "detective" story, written only a few months ago.

Here let us consider what was brain fever. It is unknown now; then it was common enough. Dick Swiveller is sometimes held to have had brain fever; but quite apart from Mr. Swiveller's lacking enough brain to get fever in, I have already suggested that he was really suffering from ambulant typhoid fever. Mary Barton is, however, in a different class. Mrs. Gaskell is a very close observer and the whole account of Mary's illness is stamped with truth. Personally I believe that brain fever was simply influenza or similar mild febrile condition occurring in a person with nerves torn to pieces by mental stress and strain. During the Great War it was a matter of common experience that the soldier with shell shock or similar nervous condition would have a remarkably severe attack of influenza, and many cases of brain fever would perfectly accord with this view.

Harry Johnston, of course, had to bring in tropical diseases with his stories of Africa in the 'eighties, but there is no novel written round a tropical disease as Mansfield wrote his "Multitude and Solitude" around sleeping sickness, or Somerset Maughan his "Painted Veil" about plague.

When Kipling came into the literary world, naturally matters were different; and he brought in all the daily medical horrors of the India of his day. Fever, almost always malaria, recurs in a dozen different stories. There are also typhoid, with that most apt criticism beginning "Doctors are very helpless in typhoid," sunstroke, cholera (and its prevention), splenic enlargement (kala-azar), with such minor ills as prickly heat, dhobie itch and Delhi sore. In one story, too, he introduces diphtheria in a most curious fashion. Diphtheria, until the days of antitoxin, was always a source of terror, difficult for us to realize in these days. Fancy a doctor like Lydgate actually dying of diphtheria, and one of Barrie's tensest afternoons in "A Window in Thrums" is that which they spend waiting for the doctor to declare whether the white patch in Jess's throat is diphtheria or not. But in "The Second Rate Woman" Kipling describes apparently laryngeal diphtheria, as the child is simply asphyxiating, treated by the application of solid caustic to the membrane. It could not be done, and yet I should greatly like to know what Mr. Kipling, usually so accurate, really thought he was describing. I think myself it must have been a condition more like a very heavy tonsillar diphtheria or even a quinsy.

But if Kipling was out in his medical details here, he can be amazingly exact. "Love of Women" is a study of locomotor ataxia, which might, allowing for the difference in Mulvaney's language, easily have been a clinical lecture.

I shall never forget how, as a student, I met my first case of locomotor ataxia. One detail after another fitted together, and it was not to "Osler" that my mind turned for identification, but to "Love of Women." The Victorians were naturally very reticent about such things as venereal disease. One can imagine the howl which would have greeted the skilful, effective and very genuine way Michael Arlen uses syphilis in the "Green Hat." Nothing else would serve the purpose; the whole incident is only too horribly possible, and in one flash Iris's telling of it clears up so much of her own tragedy and that of her first husband.

But the "Late Physician" has a sketch, "A Man About Town," which must have seemed most horribly frank to his contemporaries, and he has evidently first hand knowledge of his subject. Perhaps his position as Master in Lunacy had given

him some experience, perhaps he merely talked to medical friends. The end results of venereal disease were partly recognized at least; usually they were hidden under the cloak of the "result of dissipation," as Mrs. Ewing does in one of her stories. At other times they were frankly described, as in Conan Doyle's "Third Generation," possibly not very accurate medically, but a most effective piece of writing. "Monks" again probably had syphilitic heart disease and *angina pectoris*.

Surgery.

But if medical conditions were freely used in fiction, it is curious how little surgery was brought in. Perhaps it was the fact that in the preanæsthetic and preantiseptic days the horrors of the operating table were too much for the ordinary man to dwell upon, but the fact remains that surgery as such comes little into fiction. There is one great surgical scene, set in the early part of our century, though by one writing many years later, the operation on Lady Dunstane in "Diana of the Crossways."

We are not present at the operation. We have in fact to read carefully to find out that it was probably amputation of one breast for cancer; and yet we spend a horribly real half hour outside while the surgeons are at work, and all our horror is simply the contagion from husband and friend. Take an actual description of a similar operation, Syme removing Ailie's breast in "Rab and His Friends." There is the true atmosphere, but the horror is never so great, although almost all the details of the operation are described. Again, take Zola's description of the ambulance at Sedan—Major Bourouche amputating an arm at the shoulder joint; the details merely overwhelm us or we are too much impressed by the skill of the surgeon. In "Diana" it is different; we hear and see nothing, but we feel every stroke of the knife and every prick of the needle.

Medical Men.

Thus far the diseases which our novelists have used. And now a few minutes to some of the medical men who come into these pages. And here the difficulty is one of selection. Doctors are not common as heroes, but are useful figures to introduce. Shakespeare found an apothecary useful. But of full length portraits there are not very many. Dickens gives many small glimpses of doctors of all types, from the merely insignificant, like Mr. Chillip who helped David Copperfield into the world, to the callous, like the workhouse surgeon in "Oliver Twist," or the dishonest, like Dr. Jobbins in "Martin Chuzzlewit," the pompous, like Sir Parker Peps in "Dombey and Son" or the dissipated and weak in Lewsome in "Martin Chuzzlewit." But he has a few splendid portraits; and first let me put in those two "best known graduates of Guy's," to quote an old joke, Bob Sawyer and Benjamin Allen. Common, dirty, drunken, dishonest, they seem to have no redeeming feature, and yet one phrase recurs: "It's bound to be a splendid operation if Slasher does it," and brings at least a touch of pride in the chief exponent of their art. What was to be their future? Would Sawyer, late Knockemorf, ever become a serious practitioner? Would the allurements of pineapple rum lose their hold? Would, in fact, the not unusual happen and the dissipated student of today become the trusted family practitioner of tomorrow? Such things are not unknown, but I fear that in the case of these two such a reformation is hardly possible; and yet my own experience goes back to a man who was seldom sober at the week-ends, whose course was marked by a series of examination failures, and who now is the idol of a heavy country practice, hard working, sober and devoted.

Let us turn to a contrasting figure in Dickens, Allan Eastcourt, who marries Esther in "Bleak House."

There are many fine tributes to the medical profession in English, but the last page of "Bleak House" is one of the greatest. It was, and I believe and hope, still is a genuine picture of that first of all the members of our profession, the general practitioner. There are many men in this country and in Great Britain who are living lives as hard and as devoted as Allan's, and outside their own little circle are never heard of. Now and then a great one is thrown up who does something original which may or may not be recognized at the time. Bodington, who advocated open air treatment of consumption eighty years ago; Mackenzie, who so increased our knowledge of heart disease; Embley, of Melbourne, who worked on anæsthetics; or Genfell, of Labrador, who reformed a countryside.

Thackeray, I fear, was not very fond of doctors, though his Dr. Goodenough (whom I am inclined to identify with the Ellison who cared for him when he fell ill during the writing of "Pendennis") comes in for very kindly recognition. In Pen's illness he attends him devotedly and saves his life, apparently by freely bleeding him. But some of his other medical characters are less kindly treated. Dr. Pendennis is one of the first specimens in the gallery of snobs, not nearly the man Goodenough was and desperately ashamed of his profession. Mr. Sam Huxter and his father, too, are pretty rough diamonds. Why, for instance, is the medical student always depicted with dirty hands? Was it part of the surgical ritual of the time, when the old coat worn for operations was the more treasured the more it was blood stained, and the particularly doggy house surgeon wore needles ready threaded in the lapel of his coat?

Dr. Pendennis brings in one point—the social status of the medical profession and its steady improvement. Dr. Pendennis, to make himself the equal of the county families must buy land and set up as a squire. The Honourable Mrs. Jamieson in "Cranford" lowers herself infinitely by marrying the village surgeon, but Dr. Thorne thinks and acts as the equal of any squire about Greshambury. Lydgate is quite certain of the superior footing upon which his scientific training places him. By

the end of the century Lister, a baby of a year old in 1828, was to be a peer of Scotland and a few years later a physician was to be a peer of England.

Dr. Thorne is a splendid picture of the county practitioner of his time—hard working, honest, skilful and independent. Trollope contrasts him with two far less pleasant colleagues (whom he spoils for most of us by giving them significant names, Fillgrave and Century), and Sir Omicron Pie, the consulting baronet-physician from London. (I do not know who he was, but probably Trollope had someone in his eye.) Mr. Gibson, in "Wives and Daughters," is an even better character. I do not know why this particular book of Mrs. Gaskell is so unknown. For a hundred people who knew "Cranford," whose surgeon has already been mentioned, you will not find one who knows "Wives and Daughters." Mr. Gibson (he did not call himself doctor), his second wife, his daughter, and the squire's two sons are characters full of life and interest.

I have already mentioned the "Diary of a Late Physician." This is the first of various books of all degrees of excellence dealing with the doctor purely as a doctor and in relation to his work; not like Dr. Thorne and Mr. Gibson as members of a community, but as a doctor among patients purely. A later example of this is, of course, Ian McLaren's Dr. McCrae in "Beside the Bonnie Brier Bush," a character extraordinarily real in spite of the overload of sentimentalization with which it was drawn; a character, too, very near the life of many Highland doctors. The saccharine sentimentalization remains, but the character drawing is gone in such books as Ralph Connor's "Doctor of Crow's Nest," or still more in Isabel Cannan's "The Doctor."

And so we come to that most remarkable of all medical figures—Lydgate. The most striking point about Lydgate to me is: where did George Eliot get her original for him?

All the rest of the people in "Middlemarch" are no more than she might have shown in any other book she wrote (except "Romola"), direct from those about her in her girlhood: Caleb Garth, Mr. Bulstrode, the Vincy family, Celia, Dorothea, their husbands, the John Bull Sir James and the ascetic scholar Casaubon, and their ever delightful father; even Will Ladislaw is not impossible. But Lydgate; he is not merely a wonderful picture of a physician, but is a picture of what too often happens in medicine—success which is really failure. Medicine is full of men who began their medical career seized with a desire to go on and to know, and practice or marriage or both overwhelms them. The keen minded sceptic of established theories, the experimentalist who approvingly quoted the death bed advice of the great Boerhaave "experiment—experiment," alike tend to descend into the skilful poulticers of feelings, into diagnosticians of vague, high-sounding and meaningless titles, into the dispensers of "placebos," of tonics, of blood coolers or of mere inert coloured water. They start out so well and with such great intentions; nothing will they do which has not a physiological and pathological basis and in a fortnight they are dispensing coloured water with the best and assuring anxious mothers that the child is merely teething. Lydgate was of the type who would seek truth at all costs and order his practice by physiology and pathology. He will not dispense his medicines, and Rosie's suggestion to that effect is met with bitter anger and opposition. His position was an extraordinarily difficult one. Of much better social origin than was usual with medical students, he had gone into medicine inspired, as so many of us are, by the wonder and glory of medicine as an art and science. He had studied under Laennec, probably the greatest figure in medicine of his time, and he had come back to an England that was beginning to ferment with the new outlook. It was to be thirty years before Pasteur and Lister and Virchow began, but Louis, Gull, Bright and Addison were alive and working. What an age for a young man to be living in! And Lydgate chose a provincial town like Middlemarch in which to begin practice. There was much against him. As I have said in the first place, he came of better social stock than those among whom he had to practise—quite enough to cause envy and irritation. Next, he set himself up above his own selected rank in life; he would be too grand to send out medicines. Third, he held very upsetting views on the value of medicine and practised the "expectant method," an idea completely foreign to his audience. (Just how foreign you will realize when you consider that a case of cerebral hæmorrhage in a new born infant in 1832 was treated with two ounces of infusion of senna, two drachms of Rochelle salts, five grains of jalap and one of mild mercuric chloride, besides several purging clysters, and this a disease in which we now regard rest as essential.) Fourth, and very alarming in that society, he had studied under French teachers, and Mrs. Hackbutt's tea party decided that he would have done better to have stayed there.

He used a stethoscope, the "new fangled French toy" of Conan Doyle's old physician, and probably English provincials were as little able to appreciate its value as the Sussex rustics in "Marklake Witches" twenty years before. To most of us nowadays the mere fact that a doctor had been a student under Laennec would have marked him as no common man; in provincial England thirteen years after the master's death it was a sign of reproach.

And finally Lydgate married Rosamund Vincy. Many hard things have been said of Rosamund. After rereading Middlemarch for the *n*th time, I have come to realize that most of them are unfair. Rosie's position has never been fairly stated, except by George Eliot. She was a pretty girl, a spoiled girl with a very limited mind, made more limited by her upbringing. She married a man who, instead of settling down to make money by a steady practice like anyone else, even to sending out medicines and taking apprentices, was filled with all kinds of

stupid ideas about science and medicine and silly scruples which led him to lose all his good patients and even offend his bad ones; and his crowning folly was to want to dissect people, with the Burke and Hare murders still in everyone's minds. So he went to his doom—bitterness, blasted hopes and lost ideals—to that dreadful fate which George Eliot sums up in biting words which are too long to quote here, except Lydgate's description of her as "a basil plant, and when she asked for an explanation, said that basil was a plant which had flourished wonderfully on a murdered man's brains."

Lydgate is one of the many examples which prove that it is often not the most worthy members of the profession who achieve most success financially. To me, now as always, Lydgate is the greatest study of a medical man in our century of literature, far above Balzac's country doctor, of whom I read years ago and who has left no definite picture upon my mind.

Read and reread that page in the "Finale" of "Middlemarch" and appreciate the completeness of the picture—every line of the picture as sharp and true as a Norman Lindsay etching and the whole impression of bitter hopelessness at the end of it.

After Lydgate, one of the greatest, if not the greatest of the so-called minor characters with which English literature is filled, Falstaff, Squire Western, Tabitha Bramble, Smike, Sam Weller, Bailie Nicol Jarvie, the Laird of Dumbiedykes, George Warrington, Kirstie Eliott, Mrs. Poyser, such other medical figures as we come across seem but poor things.

Doctors are mentioned; they have their exits and their entrances, but few of them play any great part.

In "The Woman in White," for instance, there is a description of the London consultant who comes down and puts the unhappy local physician to shame —I think an unfair picture. A much fairer picture is that presented in "Lord Raingo," where the great Sir Arthur Tappit, the visiting London consultant, comes down and manfully helps to support the local general practitioner. Of course he is careful to let everyone see that he is Sir Arthur Tappit, but at the same time he lets everyone realize that the local general practitioner is really a very capable man and is doing his best, and a very good best, but that all the time he (Sir Arthur) is at hand to help in any way necessary and step in at the critical moment. It is a very pretty picture of medical symbiosis or commensalism and has the further merit of being very true.

There are many doctors, say, in Kipling, but there are no full length portraits until we come to Wells and Somerset Maughan.

Mr. Wells on the whole does not like doctors, largely, I think, because he is greatly irritated by their failure to grasp their great opportunities and responsibilities. Scattered through his books are many sketches, mostly unkind, such as that of the doctor who attended Mr. Polly, senior, in his last illness, or that of the young man who disturbed the last hours of Uncle Teddy Ponderevo.

Perhaps it is because of his impatience of what a doctor might be, compared with what he is, that makes Wells usually rather contemptuous of them when he must needs introduce doctors. Even scientists like Redwood and Bensington, who are two very thin disguises for two great scientists still living when the "Food of the Gods" was written, are shown at times in a very ridiculous light, Bensington especially so. It was a somewhat cruel caricature and probably hurt the original greatly. There is a surgeon in the "World Set Free" through whom perhaps Wells makes a hint at the doctor of the future, but his best full length portrait is Wilfred Devizes, "Christina Alberta's Father." He is indeed a skilful and kindly figure, but he somehow fails to hold the reader as do many of Wells's other characters, and he is an extremely secondary figure beside poor old Preemby Sargon. Also he is more a mental specialist than an ordinary doctor, and mental specialists are apt to be people apart. However, Wilfred Devizes is an interesting medical figure, but he does not hold our love and imagination as does Lydgate.

Somerset Maughan (who is a doctor himself) has given us a very convincing picture of a bacteriologist in "The Painted Veil"—hard, reserved, at times intensely cruel. Yet he has one characteristic which makes him stand out above all others in the book—his intense devotion to duty. The plague comes and attacks the tight-packed Chinese population. He simply drops everything in Hong Kong to go up to the scene of the outbreak, to work and to die. There is no reward, no extra pay, merely that the work is there to be done and he means to do it. So he goes, as hundreds of men and women have gone before and, let us trust, will continue to go, to work whole-heartedly among the plague-stricken villagers and at last to die in place of the wife he had planned to punish for her unfaithfulness. It is a well drawn character, if not in a pretty story, and the last chapter leaves you with a strong feeling of sympathy for all concerned, husband, wife, lover and father. The plague chapters struck me as much more real than the same chapters in "Martin Arrowsmith."

It is rather remarkable that Stevenson, who had so much to do with doctors in his life and who expressed so keen an admiration for them, gave us so little of them in his books. There are two who come into my mind. One, the doctor (he is called little else in "Treasure Island") is much the strongest man among Jim Hawkins's friends; he can descend to medicine and to surgery too on occasion, he can discuss new treatment for rheumatism (he could do that today, too), bleed Black Dog in apoplexy and dress wounds when the time comes.

Stevenson's other creation, Sir Faraday Bond, in "The Wrong Box," is, I believe, his good natured way of getting some of his own back. Whether one of the doctors mentioned in the famous "Dedication" was the original of Sir Faraday Bond I do not know, but his picture is complete, even down to his final injunction: "Avoid kippered sturgeon as you would

the very devil." That must have been worth many guineas.

If Stevenson laughed at the medical profession in "The Wrong Box," yet at least he could render the most complete homage, and his "Dedication" still remains a challenge and an inspiration to the men of medicine.

If novelists make many references to doctors, yet the unqualified practitioner was busy in the land. Lady Southwood, in "Vanity Fair," dosed her family and friends with drugs which varied from year to year, and she was probably by no means, if Thackeray's bitter outcry is to be believed, alone in her habits. In fact, the dispensing of quack medicine and tracts seems to have been Lady Southdown's chief object in life, as it was of many other ladies in high positions. The poor, too, had their quacks, like the white witch who charmed away Tom Brown's warts and could only recommend "churchyard mould" as the cure of old Benjy's rheumatics.

Nurses.

From doctors to nurses is but a step; and at once we come on the immortal Mrs. Gamp and her colleague Mrs. Pring. It is a curious thing that the name Gamp is now universally applied to an untrained nurse, whereas Mrs. Gamp was trained in so far as nurses were at all trained in her time. She was apparently a respected member of the nursing staff of "Barts" and no nursing school nowadays regards itself higher. I wonder how much of Mrs. Gamp is caricature. Even allowing for the difference in training at Edinburgh and Barts, we have a contemporary of Mrs. Gamp whom some present can still remember—Mrs. Porter, who died only a few years ago in Edinburgh. Of her could Henley write in 1873: "For thirty years she has been nursing here." This takes us back to 1843, very close indeed to Mrs. Gamp's day. Mrs. Porter was no doubt rough and uncouth to many modern ideas, but a grateful patient could write of her:

> Much is she worth and even more is made of her.
> Patients and students hold her very dear.
> The doctors love her, tease her, use her skill.
> They say the Chief himself is half afraid of her.

But to begin quoting Henley is to find a constant temptation to go on. All I can say is that the "Hospital Verses" are a photograph of a hospital in the early days of antiseptics and much of the picture still holds. In speaking of nurses, there is again one most curious omission. I cannot remember any instance of a heroine going off to the Crimea as a nurse, with the exception of Grace in "Two Years Ago," and that was only a very slight incident in the story.

Think of the number of stories, short and long, written about girls who did nursing in the late war. The contrast is curious; it is, of course, simply a mark of the complete separation of the Army from the nation, which lasted until the Boer War. An officer (like Lydgate's captain cousin) was almost a god, a private soldier something less than a beast. Thackeray had a different view, but then Thackeray came of army people. Kingsley states definitely that ladies did go out and nurse, that is, in the introduction to "The Heroes," which I have the bad taste (I am told) to consider a very noble piece of English. There is not even a nurse like the strange specimen in "Simon Called Peter," a type whom most of us would consider a libel. There is a wonderful figure in Wells's "Meanwhile," the modern equivalent of Mrs. Gamp, oh, a splendid piece of work!

Death Beds.

If your patience will allow me, I should like to turn to a different aspect of the subject—how a few writers have actually handled sick room types—and to do so I shall choose a contrasting series of death bed scenes.

First, let us take three young people: Harry in Catherine Sinclair's "Holiday House," Little Nell, and Mrs. Ewing's Leonard in "The Story of a Short Life." Mrs. Sinclair's whole idea is to make things edifying. The unfortunate young consumptive midshipman lies in bed and preaches to his relatives in the most complete resignation and self-satisfaction and fades gradually in an odour of complete sanctity. The whole affair is obviously one of real rejoicing and pleasure and he the centre of so much excitement.

Frank dies of consumption with laryngeal involvement and the description (taken from life by Miss Sinclair) is as complete as one would like. The chief feature of the disease is, of course, the piety which simply oozes out everywhere. Frank delivers long homilies and refuses laudanum, "because I cannot," he says, "willingly enter the presence of my Creator in a state little short of intoxication." There is little or no *spes phthisica*; the young midshipman is quite certain that he is going to die and quite resigned about it.

The talented authoress revels in horrors, but genteel horrors; there is no mention of a hæmorrhage or any of the more disgusting features of the disease, but emphasis is laid on the distressed breathing, the wasted frame, the pallid face and so on.

Against this set Little Nell's death. I still think she died of consumption, but I am not sure. She simply fades away. There is here no cough, no distressed breathing and no fever apparently. My own feeling is that Dickens's intense kindliness will not let him ill-treat his puppet and he just gives Little Nell, as he gave Dora, the easiest death he could imagine and he did not draw from life at all.

Of another sort is the death bed of Mrs. Ewing's Leonard. She was indeed no stranger to ill health and suffering herself, and she was also the Barrack Master's wife, so that her details are as clear and complete as Dickens's are vague. Leonard died some months after a spinal injury which leaves him paralysed, and his mind is that of a very clean, healthy and somewhat spoilt child. The course of

such an illness is very tedious and slow, but the end, as Mrs. Ewing describes it, is often very rapid; and Leonard's last days of alternating delirium, coma, with short periods of clarity and sudden death are quite in keeping with the disease she sets out to depict. Above all, there are a courage and a naturalness about her sick boy that make him an object of far keener sympathy than Nell. Nell and Frank had, of course, their successors in such books as "Ministering Children" and "East Lynne," where you will find children's death bed scenes which for sheer welter of emotions are unsurpassed. Stevenson said that the man who wrote "Home, Sweet Home," wallowed naked in pathos; so did the authors of these two books, with splendid results from the selling side. It is, I suppose, a sort of literary sadism, a bloodthirsty human sacrifice of innocents butchered to make a housemaid's holiday.

Let us turn to three grown-ups: Colonel Newcome, Uncle Teddy Ponderevo and Lord Raingo. All die of pneumonia, all are well on in years, and the illness of each is described with a vividness and accuracy which show the observation and skill of the authors, Thackeray, Wells and Arnold Bennett.

Yet there is a great difference between them. Thackeray makes us see the poor old Colonel, broken in health and fortune, just when relief has come, stricken and ill. He is in fact too ill to realize that his good fortune has come; his mind has gone, he lives in the past and can appreciate only the immediate contact of those about him. Finally, that last moment, when the mind becomes conscious, as it so often will, not perhaps of this day, but, as in his case, of a time years before, and he starts up to make his answer, *"adsum"* and dies. It is a tragic and pitiful scene, the death bed of a man we have known and respected and been bored by for years.

Contrast Uncle Teddy. There are the history of his high piled bubbles of financial schemes, his crash, the utter breakdown in spirit and body, the escape by airship from England (no mean piece of writing at a time when Santos Dumont was almost the only airman), the exposure, cold, hunger, shivering, pain, fever and at last George's realization that his uncle is seriously ill. Then come the description of that final struggle in the French village, his uncle growing steadily weaker, the details of the sordid sick room, the religious squabble of the English clergyman and the French nurse, the dying man's grasping at the hopes of immortality, and that biting description of the doctor and his hypodermic syringe, and finally Aunt Susan arriving too late.

Teddy Ponderevo was a swindler, a forger, an escaping criminal. His death was all that could save him from trial and jail (he had made no preparations as Whittaker Wright had done and as William Clissold's father was to do later on), and yet we feel with George the infinite pity and sadness of his death. In spite of all that he has written before and since, I still turn to the last chapters of "My Uncle's Career" as the high water mark of Wells's novel writing.

Then comes Lord Raingo. He has achieved the greatest of worldly successes, he has forced himself into the British War Cabinet, he is treated as an equal by the Prime Minister, he has won a peerage on his own terms, his party is winning the war, his inconvenient wife has been killed and his prisoner of war son has returned. There is only "one fly in the ointment." His lady love has disappeared and he develops pneumonia. Arnold Bennett then writes a description of a case of pneumonia complicated by empyema, requiring operation which finally "goes wrong" in the heart breaking and inexplicable way such cases will do, as impersonally as if he were writing a text book description. In fact, if you except "The Card," I doubt if Bennett ever has much real sympathy for any of his puppets. So the man who has everything at his feet, slips slowly down hill, the world about him prepares for his death, newspapers prepare his obituaries and the final touch of hopelessness is the remark of the London consultant to his son: "I can be of no further use here, and I've so much urgent work waiting for me in town—I mean really urgent."

There are three pages or so of Sam's last few minutes, as detailed and sharp as a series of photographs, and finally an attempt to get inside the mind of the dying man; his jaw falls and all is over. You could give nothing better than that account to a medical student to complete his reading up of pneumonia in "Osler" and it leaves us almost cold emotionally. It is, I think, the very weight of detail which hampers it, with, of course, the author's Hardy-like detachment from his puppet.

Thackeray cannot help loving the old colonel for all that he recognized that he might be a bore, and we have come to love with him. George Ponderevo, while fully recognizing all his uncle's failings, is yet made by his author intensely fond of him, and we get his fondness in his story. Arnold Bennett has no affection for Sam Raingo; almost the reverse at times, and his death leaves us merely crushed by the sordidness and misery of the scene. Arnold Bennett is very keen on medical details always, but he gives me the feeling that he is trying to show how much he knows. George Ponderevo merely describes what any very keenly sensitive and observant man would feel; those about the colonel merely what average people would see and notice in such a case. Thackeray is merely describing the disease as it appears to be affecting his character; Bennett tries to describe the disease itself.

Conclusion.

And here I must stop. I feel I have given you but a sketchy mass of allusions and a few feeble opinions of my own, but I hope I may send you back to your masters of English fiction with a new outlook and even half the pleasure I got from their considering in this paper.

I do not think that on the whole you will find that medicine has fallen much below the standard that Stevenson set us when he wrote:

Generosity he has such as is possible to those who practise an art, never to those who drive a trade; discretion tested by a hundred secrets; tact tried in a thousand embarrassments; and what are far more important, Herculean cheerfulness and courage.

Let us hope these will be the characteristics of medicine in fiction in the next two hundred years, and not the sordid outlook, the commercialism and shams which are presented in "Martin Arrowsmith."

PRURITUS VULVÆ IN RELATIONSHIP TO INTERMITTENT GLYCOSURIA.

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AND

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(*From the Baker Institute of Medical Research*).

ALTHOUGH *pruritus vulvæ* is one of the cardinal symptoms of *diabetes mellitus*, little attention has been devoted to its relationship to those aberrant forms of glycosuria which are characterized by the occasional appearance of sugar in the urine. In such cases the routine testing of the urine may reveal no abnormality and the condition may be easily overlooked. When investigated by a glucose tolerance test, the findings are usually either a lowering of the renal threshold to sugar or some disparity between the absorption and the storage of glucose which MacLean has termed "lag curve glycosuria." Such conditions are usually symptomless and are considered by most authorities on the subject to be benign. However, the occurrence of severe *pruritus vulvæ* in a patient with glycosuria due to a lowered renal threshold and the marked response of the condition to dietetic treatment led us to consider that an investigation of a series of patients with unexplained pruritus might be of interest. Accordingly a group of twenty-two patients has been investigated by means of glucose tolerance tests. No patient in whom the presence of *diabetes mellitus* was suspected prior to the test was included in the series. The glucose tolerance test was performed in the usual manner following the ingestion of fifty grammes of glucose by mouth, the estimations of blood sugar being made by MacLean's method. In every case a sample of urine corresponding to the fasting blood sugar level and a second sample two hours after the ingestion of glucose were obtained and subsequently examined.

The results obtained in this series are shown in Table I and can be briefly summarised thus: Of the twenty-two patients investigated, seven showed a lag curve glycosuria, six showed a definite lowering of the renal threshold, six showed a mild and unsuspected *diabetes mellitus*, three showed no abnormality to the test.

In those cases in which the glucose tolerance test revealed some departure from normal, treatment was instituted with a view towards control of the glycosuria. The results of treatment can be summarized thus: Of seven patients with lag curve glycosuria, five were improved; of six patients with lowered threshold, five were improved; of six patients with mild *diabetes mellitus*, six were improved.

The details of treatment cannot be given here for the reason that they varied from case to case. The general principles of diabetic treatment were followed and each patient was instructed in the elements of dietetic control and placed upon a definite restriction of carbohydrate which was balanced with the other constituents of the diet. An essential feature in all cases was the accurate limitation of the carbohydrate intake and the weighing of all food was insisted upon.

As an example, in case number 1, the patient aged fifty-seven years, weight 64·35 kilograms (143 pounds), was placed on a diet of carbohydrate 50 grammes, protein 70 grammes, fat 110 grammes. The calorie value of the diet was 1,470, and the glucose value 102. $\frac{\text{Fatty acid}}{\text{Glucose}} = \frac{1 \cdot 3}{1 \cdot 0}$. The food values of the three meals were adjusted in such a manner as to insure

TABLE I.

Case No.	Age.	Glucose Tolerance Test.					Urine Sugar.		Report on Test.	Duration of Pruritus.	Response to Treatment.
		Fasting.	½ Hour.	1 Hour.	1½ Hours.	2 Hours.	Before Glucose.	2 Hours after Glucose.			
		%	%	%	%	%					
1	57	0·11	0·17	0·25	0·17	0·10	0	+	Lag curve.	6 months	Improved.
2	46	0·10	0·18	0·15	0·12	0·10	0	+	Renal leak.	1 year	Improved.
3	67	0·12	0·14	0·23	0·21	0·18	0	+	Mild diabetic.	1 ,,	Improved.
4	49	0·12	0·15	0·22	0·15	0·12	0	+	Lag curve.	4 ,,	Not improved.
5	57	0·10	0·18	0·22	0·17	0·14	0	+	Mild diabetic.	3 ,,	Improved.
6	39	0·11	0·24	0·15	0·09	0·10	0	+	Lag curve.	5 ,,	Improved.
7	43	0·12	0·22	0·21	0·18	0·17	0	+	Mild diabetic.	4 ,,	Improved.
8	59	0·11	0·17	0·16	0·14	0·10	0	+	Renal leak.	4 ,,	Improved.
9	29	0·09	0·19	0·12	0·09	0·10	0	+	Lag curve.	1 ,,	Not improved.
10	30	0·09	0·16	0·18	0·16	0·14	0	+	Mild diabetic.	2 ,,	Improved.
11	38	0·12	0·20	0·15	0·13	0·10	0	+	Lag curve.	2 ,,	Improved.
12	42	0·11	0·18	0·20	0·18	0·17	0	+	Mild diabetic.	1 ,,	Improved.
13	52	0·11	0·15	0·13	0·12	0·11	0	+	Renal leak.	36 ,,	Improved.
14	48	0·09	0·14	0·13	0·11	0·10	0	+	Renal leak.	2 ,,	Improved.
15	28	0·13	0·20	0·19	0·15	0·12	0	+	Lag curve.	1 ,,	Improved.
16	38	0·10	0·15	0·14	0·12	0·10	0	+	Renal leak.	3 ,,	Not improved.
17	48	0·10	0·11	0·15	0·13	0·11	0	+	Renal leak.	2 ,,	Improved.
18	50	0·09	0·13	0·15	0·11	0·12	0	0	Normal.	4 ,,	No treatment.
19	44	0·11	0·19	0·21	0·17	0·14	0	+	Mild diabetic.	5 ,,	Improved.
20	49	0·07	0·11	0·07			0	0	Normal.	3 ,,	No treatment.
21	33	0·12	0·16	0·15	0·12	0·09	0	0	Normal.	1 ,,	No treatment.
22	37	0·10	0·15	0·21	0·17	0·13	0	+	Lag curve.	20 ,,	Improved.

TABLE II.

Case No.	Glucose Tolerance Test.					Urine Sugar.	
	Fasting.	½ Hour.	1 Hour.	1½ Hours.	2 Hours.	Before Glucose.	After Glucose.
	%	%	%	%	%		
23	0·10	0·15	0·17	0·15	0·13	+	+
24	0·11	0·18	0·17	0·12	0·10	+	+

an equal distribution of the carbohydrate, protein and fat in each. Such a diet was found to be sufficient for her daily requirements and within three weeks she was free from symptoms. Dietetic treatment has been continued for the past six months and there has been no return of pruritus.

In most cases the symptomatic relief occurred gradually, in contrast to the dramatic change which is often observed in the initial stages of treatment of a patient with severe diabetes.

Certain features of peculiar interest call for further comment.

Patient number 13 suffered from *pruritus vulvæ* from the age of sixteen years. During the next thirty-six years she had experienced intervals of freedom from symptoms for months and on one occasion for three years, but inevitably the pruritus recurred. With strict control of diet she has now been free from symptoms for nine months—a longer period of relief than she has known for the last ten years.

Patient number 22 suffered from *pruritus vulvæ* from the age of seventeen years and has undergone rigid dietetic restriction at intervals for the past twenty years, with relief of symptoms during the period of control. At intervals she has broken away from her diet and each lapse has been followed by a recurrence of pruritus.

Patient number 6 suffered from *pruritus vulvæ* of such severity that following the failure of all local treatment, an excision of the vulva was performed. This was followed by a recurrence of pruritus in the scar. After regulation of her diet she experienced a greater degree of relief than she had obtained by any other form of treatment.

The greatest difficulty in treatment occurred when intermittent glycosuria arose from a lowering of the renal threshold, as a very severe restriction of carbohydrate was necessary in some cases to render the urine constantly sugar free. Case number 12 exemplified this fact. The renal threshold was apparently lowered below 0·14% and symptomatic relief was obtained only after a drastic reduction in the carbohydrate content of the diet.

Two cases of *pruritus vulvæ* occurring during pregnancy have also been investigated. In both there had been no sign of pruritus before the fourth month of the pregnancy. Both of these patients were *primiparæ*. A glucose tolerance test yielded the result set out in Table II.

Examination of the type of urine sugar by means of the ozazone test showed that both glucose and lactose were present in each case. As neither of these patients is under our direct observation we have been unable to study the effect of dietetic treatment upon their condition.

Despite the apparently close relationship between many cases of *pruritus vulvæ* and the aberrant forms of glycosuria, no considered study of this subject appears in the literature. While no claims are made that dietetic treatment is a panacea for all forms of *pruritus vulvæ*, it would seem that an intermittent glycosuria may well be the reason for the failure of many of these cases to respond to the variety of therapeutic agents which have been recommended from time to time. A careful review of the carbohydrate tolerance and excretion in all intractable cases would seem advisable.

As a preliminary clinical test, the examination of the urine several hours after a large carbohydrate meal or after the ingestion of a large quantity of glucose may give a clue to the underlying exciting factor.

Summary.

A close relationship is shown by many cases of *pruritus vulvæ* to a variety of conditions which are characterized by an intermittent glycosuria.

Following the strict dietetic control of these conditions a marked improvement was observed in a series of patients under our personal observation.

It is possible that the occurrence of *pruritus vulvæ* during pregnancy may be explained in a like manner.

Acknowledgements.

Our thanks are due to Mr. Robert Fowler for the suggestion that a series of these patients might be investigated. He has given great assistance in referring patients to us for this purpose.

We also desire to thank Miss Mabel Flanley for her assistance in the dietetic management of the patients considered in this series.

Reports of Cases.

TWO CASES OF ERYTHRŒDEMA.

By A. W. SHUGG, M.B., B.S.,
Hobart, Tasmania.

THE first patient was a female child, aged six and a half years. The mother noticed two months earlier that the child was becoming irritable, restless at nights, and that its appetite was poor; also that it had frequency of micturition and occasional enuresis. The bowels were loose, the motions normal, and the mother had not seen any thread worms.

Examination revealed a pale, tall, thin child of auburn complexion; the skin was dry, but clear. The muscles were flabby, with hyperextension of all the joints. No abnormality was detected in the chest or abdomen. Examination of the central nervous system showed the ankle, knee and other jerks to be diminished. The throat passage was clear, though one tonsil was enlarged. On examination of the child's teeth, all the front incisors were found to be missing; the first molars were carious and no new molars were visible; two second incisors were just coming through.

The patient then gradually developed typical erythrœdema. An erythematous rash appeared first on the

abdomen, then extended all over the body, being especially noticeable on the soles of the feet and the palms of the hands.

Desquamation began and soon the deeper layers of the skin peeled from the soles and the palms. Sweats and photophobia became very marked. Diarrhœa occurred at times, but the urinary symptoms disappeared. The musculation became very soft and the child was a picture of abject misery. The hair became dry and subsequently the temperature rose slightly at times. A mild bronchitis developed and lasted for fourteen days. The child's condition gradually improved, until at the end of four months she was again quite well. This was the second attack of erythrœdema. At the age of twelve months the child developed erythrœdema and eighteen months elapsed before it recovered. The gums were badly affected and all incisors were shed. From then until quite recently the child had been perfectly healthy.

The second patient, a brother of the first, was a child aged eleven months. The child had been perfectly healthy until three months after the onset of symptoms in his sister, when he began to develop the disease. This case was almost identical to the last mentioned and complete recovery occurred in approximately four months. Since their recovery, both children have developed normally.

The second attack in the elder child is most interesting; I have not seen a similar case reported.

The family history of neither of the parents gave any suspicion of erythrœdema. The dietetic history was excellent and the hygienic conditions of the family beyond reproach.

The occurrence of the second case under these conditions points strongly to the infective nature of this disease.

Reviews.

EPILEPSY.

IN these days of specialization it is difficult for a medical man to keep abreast of developments in even his own specialty. Dr. Edward A. Tracey appears to have failed in this respect, for his monograph, "The Basis of Epilepsy,"[1] is singularly lacking in references to such contributions to our knowledge of the subject as have been published during the last decade. Dr. Tracey has allowed himself to believe that epilepsy is a disease of the sympathetic nervous system. He bases this belief largely upon the work of Echeverria, who, it is stated, found signs of "a more or less impaired state" in the sympathetic ganglia in each of twenty autopsies performed upon epileptics. Additional proof is provided by tests for vaso-dilatation and vaso-constriction of the skin in response to stroking. These tests are apparently of Dr. Tracey's own devising; they are, no doubt, the result of careful observation and they emphasize the need for better and surer functional tests for the vegetative nervous system. In themselves, however, the tests are inadequately controlled with regard both to normals and to nervous and mental diseases other than epilepsy. To his skin stroking tests Dr. Tracey gives an altogether unjustifiable significance.

A section of the monograph is devoted to the diagnosis and treatment of incipient epilepsy. The former depends almost entirely upon the skin reaction and the latter upon the oral administration of *œnanthe crocata* in colloidal solution. Dr. Tracey records the cure of one case of incipient epilepsy by this medication. The patient, a boy aged twelve years, suffered from nervousness, irritability and occasional fainting spells, mostly resulting from the sight of blood. Once, on seeing his father hurt, the patient became suddenly weak, but did not lose consciousness. The skin reactions convinced Dr. Tracey that these symptoms were attributable to incipient epilepsy. By "taking the medicine faithfully for seven months" the boy made a complete recovery. Other patients made some temporary improvement when taking colloidal œnanthe, but cure was not effected because they declined to take their medicine regularly. The book is full of unconscious humour.

[1] "The Basis of Epilepsy," by Edward A. Tracey, M.D.; 1930. Boston: Richard G. Badger (The Gorham Press). Demy 8vo., pp. 92, with illustrations.

GYNÆCOLOGY.

"A SHORT PRACTICE OF GYNÆCOLOGY," by Jellett and Tottenham, has reached a sixth edition, and by that fact has demonstrated that it fills a place in medical literature.[1] In this edition an attempt has been made to deal in a practical manner with the more recent advances in gynæcology. Dr. Tottenham seems by the preface to be mainly responsible for the present edition and acknowledges the generous help he has received from leading American gynæcologists. Radium has been specially dealt with by Dr. W. Stevenson, and cystoscopy by Dr. Kamnicker; the value of the book is thus enhanced for both students and practitioners. The frontispiece is a beautiful scheme of the lymphatic glands of the pelvis and lower part of the abdomen, after Döderlein, well worth study. The arrangement of the book has not been altered. It opens with a short but sufficient chapter on examination and general diagnosis. The Sydney Hospital speculum for office work will be found superior to those figured.

The illustration of the external genitals is misleading, in so much as it represents the fourchette screening the *fossa navicularis*, which it does not do.

Anomalies of the menstrual function are well treated. The author warns against attributing menorrhagia to general causes until the results of local treatment definitely show that it has not a genital origin. We believe the contrary warning is more needed. Constitutional and adnexal causes should be excluded before local treatment of the uterus is undertaken. Diagnostic curettage may be highly mischievous in cancer of the uterine body, as it opens up channels for the spread of the disease.

The authors stress the importance of constitutional treatment in dysmenorrhœa.

We are very pleased to read that the removal of the ovaries except for malignant disease "cannot be too strongly condemned"; also that "it is advisable to emphasize strongly that irregular hæmorrhages are no part of the normal menopause and may be of the utmost importance." Under leucorrhœa is another wise note of warning: "Leucorrhœa may be a symptom of some trifling inflammatory condition, it may also be a symptom of some of the gravest forms of genital disease." The *trichomonas vaginalis*, about which much has recently been written as giving rise to an important and intractable form of vaginitis, is not mentioned.

The subject of displacement of the uterus is on the whole well done. One might take exception to phrases such as "the vagina is able to support the uterus," but, reading carefully, one sees that the author probably means that the paravaginal and paracervical tissues are responsible. Again, the weight of the uterus is given as a factor in the causation of procidentia, whereas it is a daily experience to find a very bulky uterus, from chronic metritis or myoma or pregnancy, not in the least prolapsed. We should have preferred the author to have more clearly stressed the teaching of Donald and Fothergill that the fibro-muscular bundles constituting the parametrial, paravaginal and paravesical tissues form the main support of the pelvic contents and that all other structures are subsidiary.

The prolapse of the uterus in virgins is mentioned, but not the skeletal defect associated with it. In such cases the sacrum is straight, not tilted back as it should be, so that the sacro-vertebral angle is absent.

In treatment the author writes: "Interposition is a very satisfactory method of treating a prolapse." We thought this operation had been long since "passed on the road." We agree that the Mayo treatment by vaginal

[1] "A Short Practice of Gynæcology," by Henry Jellett, B.A., M.D., F.R.C.P.I., and Richard Tottenham, B.A., M.D., D.P.H., F.R.C.P.I.; Sixth Edition; 1930. London: J. and A. Churchill. Royal 8vo., pp. 536, with four coloured plates and 360 illustrations, some of which are in colour. Price: 21s. net.

hysterectomy is undesirable. The Donald-Fothergill operation is figured at the end of the volume and is faintly praised. We consider it "holds the field."

In radical treatment of backward displacements the author mentions favourably suspension operations and also internal and external shortening of the round ligaments. Pessaries are given much prominence. We should have liked the author to emphasize that our present knowledge of the bacteriology of the vagina indicates that all pessaries cause stasis of secretions and favour sepsis. This is especially true of the soft rubber ring, the use of which is unjustifiable. Ring pessaries also are unscientific in so much as they act by stretching the vaginal walls and have not the lever action of a Smith-Hodge.

For chronic inversion of the uterus the author recommends "making an opening from the vagina into Douglas's pouch, incising the constricting isthmus, reducing the body through the widened passage thus obtained and finally closing the incision in the isthmus by sutures." This would probably be more difficult than Haultain's posterior hysterotomy through the abdomen which we have found most successful.

In the treatment of acute corporeal metritis (puerperal) the author advocates more active measures, such as the Carrel-Dakin and injection of formalin, than is nowadays considered wise.

Under curettage, the futility and danger of this procedure for discharge, the result of gonorrhœal infection of the cervix, might have been pointed out. Curettage and the various plastic operations on the cervix are well described and illustrated.

In regard to myomata, the author states that these tumours are associated with malignant changes in 9·2%; on account of this and the fact that X rays and radium act by their effect on the ovaries, these agents are "just as objectionable as the old treatment of removing the ovaries and leaving the uterus." In this we are disposed to agree and also with the statement that in hysterectomy "the ovaries should always be left behind." "The subtotal form of hysterectomy is the operation of choice." Here the author shows himself behind the times.

The section on malignant neoplasms of the uterus is very well done. Results of treatment in the various clinics, surgical and by radium, are given. According to these, in cancer of the cervix surgery has a slight advantage and in cancer of the body an immense advantage. The latest methods in application of radium are described.

The chapter on neoplasms of the ovary is all that such should be. There is a plate showing a dissection of the vessels and nerves of the pelvis which is equal to anything published. On page 300 is a statement which should be taken to heart and is, we fear, sadly needed. "Infection may occur as a result of operative interference. Curettage is frequently performed in the hope of curing leucorrhœa. It is definitely contraindicated in the presence of infection of the cervix."

On page 308 the author states that vaginal incision and drainage are indicated as a preliminary to the removal of the appendages with the object of lessening the risk of infection of the peritoneal cavity (in acute cases). The credit of this life-saving procedure is not given to the Australian surgeon, R. Worrall, who first advocated and practised it as the first stage in the two-stage method of operating for acute conditions in the pelvis. His work was published in *Surgery, Gynecology and Obstetrics* in 1925.

In the different infections of bladder, uterus, tubes, vagina, the author advocates vaccine treatment and gives details as to dosage *et cetera*. The general experience of the profession is not so favourable.

The chapter on sterility shows wide reading and is quite up to date. Radiotherapy is given as a cause.

The section on cœliotomy, general considerations, is excellent. Prior to a dangerous operation "it is unnecessary to resort to methods of diagnosis which may impose a strain upon the patient." "A necessary operation must not involve a greater risk than the condition for which it is performed." "If the patient moves readily from side to side there is no dangerous lesion inside the abdomen." One might take exception to this latter statement to some extent, as in biliary and renal colic the patient may writhe about the bed, and these are certainly serious, if not dangerous, lesions.

Discussing drainage in pelvic operations, the author recommends packing the pelvis with gauze, to be removed on the following day in whole or part. It has been proved that gauze used in this way excites an outpouring of peritoneal lymph, which, as it cannot drain away through the matted cork-like gauze, is banked up and becomes a culture medium for organisms. The proper gauze drain is a narrow single strip on the stretch, the portion within the pelvic cavity not more than three inches long. This will drain oozing blood into the vagina during the first few hours and thereafter will become gradually coated with plastic lymph so that it can be removed with little pain in seven or eight days.

In the treatment of post-operative tympanities the author does not mention the great value of eserine, one-fiftieth of a grain, or a cubic centimetre of "Pituitrin." This chapter is not sufficiently full; for instance, the differential diagnosis between paralytic ileus and mechanical obstruction from an unsevered band or adhesion and kink, is not discussed.

Abdominal operations are well illustrated and described. After subtotal hysterectomy the author recommends "excising the mucosa from the upper part of the cervical canal." As a means of removing an existing septic focus in the cervix or preventing the future development of cancer this measure is quite useless. To achieve these desirable ends it is necessary to remove the whole of the cervical mucosa and with it a layer of subjacent muscularis into which the racemose glands of the cervix dip. To anyone accustomed to the simple technique of the Worrall total hysterectomy, the Doyen and Graves methods figured in this work must appear difficult and dangerous.

Myomectomy, ovariotomy, salpingectomy, prolapse operations, including Donald's, are all well described and illustrated.

On the whole, this up-to-date text book is as good a guide as the student, teacher and practitioner could have.

BEVERAGES.

"So much nonsense has been talked by the extreme opponents of alcohol that the Scientific Committee of the True Temperance Association have conceived it their duty to . . . supply the public with the true facts of the case." In accordance with this belief they have considered that "the publication of a small book on beverages, with chapters appearing over the signatures of writers whose names carried some weight, might be of . . . value as propaganda for moderation or true temperance." This symposium has now appeared under the title "What We Drink,"[1] with an introduction by Sir James Crichton-Browne, and chapters on the caffeine beverages, spirits, wine, beer, milk, water and soft drinks by Professor W. E. Dixon, Sir W. H. Willcox and Dr. Robert Hutchison, Dr. H. W. Bayly, Dr. Stella Churchill, Dr. R. A. Lyster and Dr. G. A. Peachey, respectively.

This excellent little book can be cordially commended to laymen and medical practitioners alike. For many of the latter Professor Dixon's chapter in particular contains much that is new and useful. The book is full of sound information presented in a very readable manner. It would be well if its teachings were adopted as part of the course of hygiene in schools in place of the hopelessly unscientific stuff that is crammed into so many children as the result of the efforts of well-meaning but ignorant fanatics.

There is very little room for destructive criticism, but we think that Dr. Churchill has exaggerated the thermolability of the antiscorbutic vitamin and the inferiority of scalded to fresh milk. We doubt if there is a particle of real evidence that the taking of iced drinks by healthy persons when heated is harmful. We also regret that the editor has allowed Professor Dixon and Dr. Peachey to express different views as to the amount of caffeine that can be ingested daily with impunity.

[1] "What We Drink," by Various Authors, Edited by H. Wansey Bayly, M.R.C.S.; 1930. London: William Heinemann (Medical Books) Limited. Crown 8vo., pp. 142. Price: 1s. net.

The Medical Journal of Australia

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All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

ON READING.

THERE has probably been a time in the lives of most men when they have felt more than a little sympathy for the prophet who wrote: "Of making many books there is no end and much study is a weariness of the flesh." The attitude of the average man to books changes with his added years. The school boy as often as not goes to his books as he goes "whining . . . creeping like a snail unwillingly to school." His books are something to be read, to be learned and remembered; what is written in them is true and is not to be called in question. Some people do not pass beyond the stage of instruction; they are prepared to accept what other people think, to imagine that other people's thoughts, when they are absorbed like so much ink in the blotting paper of their minds, are their own thoughts, and that they are passing wise. But education, as the word implies, brings wisdom and judgement. The mind has awakened from its chrysalis stage, it has learned, in accordance with the extent of its training, to appreciate glimmerings of the truth as they flicker across the printed page, to recognize sincerity and falsehood—in short, to tell the good from the bad. A stage further, and the reasoning faculties, aided by experience and, since human beings are what they are, hedged in by convention, accept the good, and by a process of what we may call mental metabolism, build up reserves for the mind.

The medical student is like the boy. He may not emulate the snail in his approach to books, but he must, at any rate in the early stages of his career, regard them as infallible. He finds it necessary to peruse with more than usual care papers written by his teachers. Woe betide him if on "that great and terrible day," the day of examination, he advance heterodox views, or rather views regarded by his teachers as heterodox—his teachers unfortunately are his examiners. He realizes sooner or later, generally sooner, that his teachers are not always right, that others of equal mental calibre have opinions worthy of respect and consideration, and that no sense of conviction can be his until he has looked at a question from all its sides, weighed the evidence and drawn his own conclusions. Thus is begotten a healthy scepticism which is essential to all reading on scientific subjects. Works on medicine and the allied sciences are but one of the avenues along which the medical practitioner may direct his reading and there is no need to emphasize its importance. We may, however, turn to another which, for want of a better term, we may call the cultural direction.

Books are sought for many reasons. Some will open them because they have little else to do and others because they need mental relaxation. Others again who eschew the browsing of the first order or the search for mere intellectual refreshment of the second, are students of literature and of the philosophy of life. They love literature for its own sake or look for light on the art of living. Professor Murdoch believes that there are four kinds of book. A book, as far as he is concerned, belongs either to the literature of escape, the literature of experience, the literature of direction or the literature of revelation. The first class offers escape from the actualities of life, the second enriches life by adding to our own experience the experience of someone else, the third deals with the art of living and the fourth throws light, not upon the conduct, but on the meaning of life. A cynic would add that many

books are not literature at all; he would probably be right. Books of Professor Murdoch's four classes all have their place. Medical practitioners as a class are fond of reading and, maybe, turn to it chiefly as a relaxation. Many a person finds contentment in the contemplation of a piece of sculpture or in looking at the picture from the brush of a master. Another will gain solace, comfort and even relief from physical pain by listening to a Bach fugue, a Beethoven symphony or a Brahm's sonata. So, too, the cares and troubles of a topsy-turvy world and the knocks that it gives are forgotten in the lyrics of Keats, of Shelley or of Swinburne, in the intense word pictures of Francis Thompson or in the youthful vigour and *joie de vivre* of Rupert Brooke, in the charm of Barrie, in the whimsical moods of Stevenson or in the realism of Hardy. It has been said that the appreciation of literature is a question of temperament and not of teaching. This, no doubt, is true, but it is equally true that love of literature is like a young plant, carefully nurtured and fed, which grows to produce in turn leaves, flowers and fruit. There are surely very few people in the world like the young woman who made reply to the suggestion of her *fiancé* that he should give her a book for her birthday: "Don't give me a book, I have one of those."

Given a love of literature and the wish to become the "full man" described by Francis Bacon, a man has to select his literature. Selection will be determined by temperament and by the objective. Oscar Wilde pointed out that catholicity of taste is not without its dangers; he also said that: "It is only an auctioneer who should admire all schools of art." So with schools of thought and types of literature. Reading with a definite objective need not be discussed. A good example of the result of such an effort is seen in this issue from the pen of Dr. S. F. McDonald. Dr. McDonald has given readers of this journal a great deal of pleasure, and he has also, we may be quite certain, derived much satisfaction and enjoyment from his reading. Varying moods will undoubtedly determine the author and the type of literature chosen. We would suggest that reading should be systematic and that an attempt should be made to graduate from what Professor Murdoch calls the literature of escape through the literature of experience to that of direction and revelation. It is perhaps difficult to say whether the joy of discovery is greater than the joy of reviving memories of a loved author. It probably is, but it is quite certain that no pleasure is so intense and no satisfaction so abiding as the pleasure and satisfaction which come from devotion to the gems of literature. Once the discovery has been made, regret for years of misspent effort will make impossible any waste of time in the future.

Current Comment.

THE USE OF BISMUTH IN THE TREATMENT OF SYPHILIS.

IN 1889 Balzer suggested that bismuth salts would be of use in treating syphilis, but, as the ammonio-citrate which he used, caused severe toxic effects when injected into dogs, the matter was not persevered with until in 1916 Sauton and Robert found that the tartro-bismuthate of potassium and sodium prevented and cured fowl spirillosis and trypanosomiasis. These observers concluded that bismuth would be useful in treating recurrent fever and syphilis. Sazerac and Levaditi in 1920 confirmed this as regards animal syphilis, and Fournier and Guénot successfully applied such treatment to syphilis in man. Sazerac and Levaditi showed that bismuth preparations are from ten to twenty times as toxic when given intravenously as when administered by the intramuscular route. It was early considered that the ultimate effect of bismuth preparations depended on the amount of the metal administered, irrespective of the form in which it was injected. It is generally held that the bismuth treatment of syphilis is more efficacious than that by mercury, but less so than by the arsenicals. S. S. Greenbaum, assisted by Anna M. Rule, has studied the curative values of certain bismuth compounds.[1] The list of bismuth preparations on the market is becoming enormous. It is far larger than the list of mercury preparations for treating syphilis. Choice of preparation is often guided by the extravagant claims of the makers or by the painlessness of the preparation, its tolerance and absence of toxicity. In 1924 there were 130 bismuth products on the market, the bismuth content varying from 15% to 98%. A medical practitioner not knowing the percentages of bismuth in the different preparations and using the same dosage would expect the same results from one with a low bismuth percentage as with a high percentage one. This is actually the case with certain products, but, as a general rule, the higher the bismuth content, the better is the product.

[1] *The American Journal of Syphilis*, January, 1931.

The object of Greenbaum's study was to determine the curative doses of various bismuth products and confirm the facts reported by Levaditi and others relative to the choice of preparation in treating syphilis. Sazerac and Levaditi, using precipitated bismuth in extremely fine division, found that ten milligrammes per kilogram injected intramuscularly rapidly cured active scrotal syphilis in a rabbit. Others showed that an infinitesimal amount of bismuth metal was sufficient to destroy treponemas and cure chancres. Bismuth metal alone, irrespective of the constitution of the formula into which it enters, is actively specific against syphilis. Any combination seems to play only a secondary part and such combination must be broken up and the metal freed in an assimilable form. The greatest efficiency of a compound is attained when its physical and chemical properties are at an optimum. Definite rôles are played by the chemical composition, physical properties, ease of disintegration and absorbability of the drug. A compound poor in bismuth metal, but especially active on account of its chemical arrangement, may be found preferable for use. It is not, however, always a question of absorption when given intramuscularly. Cole found that metallic bismuth, bismuth oleate and bismuth salicylate were very slowly absorbed, but potassium bismuth tartrate much more rapidly. Greenbaum's studies showed that metallic bismuth and the oleate were spirochæticidal in small doses, but that the salicylate was not, metallic bismuth being more efficacious than the oleate. But Gruhzit states that the salicylate is absorbed more rapidly than the potassium tartrate or oleate and is therefore better in treatment than these. Hanzlik and others have studied the matter of excretion and conclude that accumulation of bismuth in the tissues after intramuscular injection would not necessarily increase in proportion to the dosage and, for maintaining saturation of the tissues small repeated doses are better than intensive medication. In Greenbaum's work on rabbits injections were given intramuscularly. Cure was estimated by the tissue transfer (lymph gland) method of Brown and Pearce, who showed that disappearance of spirochætes and healing of lesions may represent only apparent cure. Lymph gland transfers from animals deemed cured to healthy rabbits often revealed spirochætes. In Greenbaum's work the only animals used had well marked testicular syphilomata in which, on puncture, were found a representative number of motile spirochætes. From apparently cured rabbits the popliteal glands were removed at the end of sixty days, ground up and injected into the testicles of two healthy rabbits. Cure in the original animal was based on the absence of clinical and dark field evidence of syphilis in the new rabbits over sixty days. The results showed a wide variation in curative doses, such dose being as low as two milligrammes per kilogram (bismuthoidal) and higher than twenty-five milligrammes (bismudol and iodobismuthate of quinine). Bismuthoidal is practically pure bismuth. Bismudol contains 57% and iodobismuthate of quinine 20% of bismuth. Both of these latter needed five times or more the dose of potassium bismuth tartrate (containing 65%) to effect cure. A product with a high bismuth content does not necessarily possess high curative qualities. Bismosol (with 35%) has a curative dose of ten to twenty milligrammes per kilogram, but bismudol (with 57%) requires over twenty-five milligrammes. Bismuth compounds vary greatly in spirochæticidal power, just as do the different salts of mercury and arsenic. Animal experiments, however, are not always a safe guide to the treatment of the human subject. This is certainly true of mercury compounds. Flumerin, which is a complex compound of mercury and fluorescein, has a poor spirochæticidal effect in the human subject, but gives remarkable results in the rabbit. The same doubtless applies to bismuth products.

Greenbaum's studies reveal extreme variations in effectiveness of different bismuth products. These variations cannot always be determined clinically. Bismuth dosage does not depend entirely on the amount of bismuth metal in the product nor on the total amount of bismuth injected in a complete course. Products with small amounts of bismuth, compared with higher percentage compounds, may produce just as good clinical and serological results. A primary lesion in a human being may disappear after the injection of one dose (200 milligrammes) of one compound or, on the other hand, may resist five doses, each of 200 milligrammes of another product. In general, however, a compound less rich in the metal will need a greater number of administrations. It is futile to use the same dose of all the compounds. Mercury cyanide in daily intravenous doses of sixty milligrammes (one grain) will control secondary syphilis, but, if given every second or third day, will have stimulative effects. The same may be true of bismuth products, in which the low or high metal content, the solubilities and other factors may be the reason for the fact that for each product the dosage as to frequency and quantity must vary. The disappearance of spirochætes and healing of lesions are valuable evidence, but neither in animals nor in human beings are necessarily the best criteria of the value of a drug. Only well established and completely investigated preparations of bismuth should be employed and vaunted superiorities claimed by manufacturers should be disregarded unless accompanied by convincing experimental, clinical or serological evidence.

The new British Pharmacopœia will contain an injection of metallic bismuth in suspension and also an injection of bismuth salicylate in oil. If these do not meet requirements, the introduction of other preparations may be warranted, but not till then. It seems obvious that the actual amount of bismuth in the preparation is the prime consideration, but is not the whole problem. As with arsenic and mercury, the combination or form in which it is presented to the tissues is of importance.

Abstracts from Current Medical Literature.

BACTERIOLOGY AND IMMUNOLOGY.

Direct Counting of Blood Platelets.

H. K. GOADBY (*Journal of Pathology and Bacteriology*, October, 1930) describes a method for counting blood platelets which he claims is direct, easy and quick. The basis of the method is the use of a waxed capillary pipette, which, after waxing, has been calibrated to contain 40 cubic millimetres. With this pipette 40 cubic millimetres of blood are taken from the finger and mixed quickly in six cubic centimetres of diluting fluid in a ten cubic centimetre waxed glass-stoppered bottle, making a dilution of one in 150. The red cells, leucocytes and platelets are then counted directly in the same hæmocytometer chamber. Capillary pipettes are drawn out from six millimetre bore glass tubing to approximately a length of ten centimetres and a bore of one millimetre and coated inside with paraffin wax with a melting point of 63° C. They are then calibrated by taking up 40 cubic millimetres of distilled water delivered on to the smooth surface of a slab of wax by a special pipette made to deliver 40 cubic millimetres accurately. The top of the column is marked with a fine grease pencil. The diluting fluid is prepared as follows: Sodium citrate, 2%; sodium chloride, 0·29%; brilliant cresyl blue, 0·1%; formalin, 0·3%. In counting a round well type of Thomas-Hawksley counting chamber is used and at least half an hour must be allowed for the platelets to settle; 1,000 to 2,000 small squares are counted.

Tubercle Bacilli in Sputum.

A. STANLEY GRIFFITH (*Journal of Pathology and Bacteriology*, October, 1930) summarizes the results of an investigation into the types of tubercle bacilli occurring in the sputum of patients with pulmonary tuberculosis. In foreign countries no case of *phthisis pulmonalis* definitely attributable to infection with bovine tubercle bacilli has been discovered, though sputum examinations in 926 phthisical infections have been reported. In England, out of a total of 327 phthisical persons, three have been found to be expectorating tubercle bacilli of the bovine type only with the sputum. In Scotland bovine tubercle bacilli have been demonstrated in the sputum of no fewer than eighteen phthisical persons, in most cases repeatedly. In one case the bovine bacilli were associated with human tubercle bacilli, while in the others they were the only type of tubercle bacillus obtained from the sputum. The total number of Scotch patients examined up to 1930 is 468, so the proportion of bovine infections is approximately 4·5%. A majority of the patients with bovine infection gave clinical histories which indicated that the tubercle bacilli entered the body through the alimentary tract. Eleven of the patients have died and in two instances autopsies were made. In each a cavity was found in the lungs and pure cultures of bovine tubercle bacilli were obtained from the pulmonary and other lesions, thus corroborating the conclusions from sputum examinations that these were cases of *phthisis pulmonalis* due to bovine tubercle bacilli. Four further autopsies on cases of generalized tuberculosis with cavities in the lungs due to bovine tubercle bacilli are quoted from the literature. The anatomical evidence in four of the six autopsies indicated the alimentary canal as the portal of entry of the bovine bacilli, while in the remaining two the evidence was inconclusive, though favouring the alimentary rather than the respiratory tract. Investigations have shown conclusively, therefore, that ulcerative pulmonary tuberculosis in the human subject, indistinguishable from that set up by the common human tubercle bacillus, may be caused by bovine tubercle bacilli which have invaded the body through the mucous membrane of the alimentary tract. In none of the cases was there a family history of tuberculosis and there was no evidence that any of the infected persons had derived their infection directly from a previous patient with tuberculosis. While no evidence has been obtained of the occurrence of pulmonary tuberculosis in any of the contacts of the patients with bovine infections, instances are given of fatal general tuberculosis in children due to bovine tubercle bacilli, in which the anatomical evidence pointed definitely to the respiratory tract as the portal of entry of the bacilli.

The Production of Immunity with Pneumococcus Vaccine.

ALVAN L. BARACH (*Journal of Experimental Medicine*, April, 1931) records observations on the administration of pneumococcus vaccine to patients suffering with lobar pneumonia. The literature dealing with attempts to induce active immunity in man during the course of lobar pneumonia is dealt with. The author summarizes his results as follows: Pneumococcus vaccine was administered to twenty-nine patients with pneumonia to determine whether a state of immunity could be induced during the course of the disease. Twenty patients received an intravenous injection of pneumococcus vaccine or pneumococcus filtrate. Nine pneumonia patients received an intradermal injection of vaccine. Eight patients with miscellaneous diseases received an intravenous or intradermal injection of pneumococcus vaccine. Of twenty-three tests in which the serum of the patient was studied for the appearance of protective substance after intravenous injection of heterologous pneumococcus vaccine twenty, or 87%, gave a positive response within six days of the administration of the antigen. The average day of onset was 4·4 days after injection. Of nine tests of the same character following the intravenous injection of pneumococcus filtrate, eight, or 89%, showed a positive response, the average day of onset being 5·6 days after injection. The appearance of specific protective substance following heterologous injection of pneumococcus vaccine appeared to be due to the introduction of the vaccine and not to the natural course of the disease, as was shown by negative control experiments. Among twenty-four tests with intradermal injection of vaccine, ten, or 42%, gave evidence of slight protective substance of irregular degree 4·5 days after injection. No immediate reactions were observed following the intravenous or intradermal injection of pneumococcus vaccine. One chill occurred after injection of pneumococcus filtrate. Of twenty patients injected intravenously with pneumococcus vaccine or filtrate two died of their disease, one a patient in whom homologous vaccine was used, and the other one to whom a heterologous vaccine was administered. The author states that conclusions concerning the therapeutic value of the introduction of pneumococcus vaccine in pneumonia must await further investigation.

The Production of Potent Antitetanic Serum.

S. N. PREDTECHENSKY (*Journal of Immunology*, February, 1931) gives details of a method of immunizing horses to produce antitetanic serum of unusually high titre (up to 1,500 to 2,000 units). The strains of organisms used were obtained from various Russian bacteriological institutes. The broth for media was prepared from veal according to the modification of H. L. Wilcox of Anderson and Leake's method. After inoculation flasks were incubated at 36° C. for fifteen days. To the filtrate obtained with a Chamberland or Berkfeld filter 0·5% carbolic acid was added. Standardization of toxin and sera was carried out according to universally adopted American methods. The method of producing immunization was as follows. Three or four months before the main course of immunization the horses received several preliminary injections of the toxin-antitoxin mixture and of pure toxin, which resulted in the formation of a ground immunity. The main course of immunization consisted, after a few injections of a toxin-antitoxin mixture, of injections of pure toxin, the doses of which were doubled at each succeeding injection and reached 500 to 1,000 cubic centimetres. The intervals between the injections were two to four days.

Acid-Fast Bacteria in Milk.

HAROLD E. ALBISTON (*Australian Veterinary Journal*, December, 1930) reports the recovery by guinea-pig inoculation of acid-fast bacteria other than *Mycobacterium tuberculosis* in 119 out of 1,283 samples of milk from individual farms. In direct examination of 213 samples of milk from 213 farms acid-fast organisms were found

in 55 (26%). In the inoculated guinea-pigs the diagnosis was made as a result of the production of lesions which in the majority of cases consisted of a small yellowish nodule of granulation tissue containing a varying amount of semi-cheesy pus. Lesions were found in the subcutaneous tissues, in muscle and in lymph glands, but in no case was the infection found to extend to the internal organs. Smears from the lesions stained by Ziehl-Neelsen's method showed the presence of acid-fast rods frequently resembling tubercle bacilli and morphologically indistinguishable from them. On glycerine agar the organism shows a growth in three days. It is pointed out that when the detection of tubercle bacilli in milk is made by guinea-pig inoculation, these saphrophytic acid-fast bacilli are liable to cause confusion, especially where lesions of lymphatic glands follow inoculation.

HYGIENE.

Carbon Monoxide and the Fragility of the Red Blood Cells.

MAY R. MAYERS, HELEN RIVKIN AND FRANCIS KRASNOW (*Journal of Industrial Hygiene*, October, 1930), in investigating the toxicity of carbon monoxide, draw attention to experiments by other observers which indicate that a mixture of carbon monoxide with one or more toxic gases is more toxic than is the sum of the toxicity of the individual gases. In a series of experiments *in vitro* normal blood was exposed to chemically pure carbon monoxide, illuminating gas and automobile exhaust gas. Samples of normal blood and aerated blood as controls were titrated with sodium chloride solutions of varying strengths to determine the strengths of solution required to produce complete and partial hæmolysis. Further samples were then treated with the three gases mentioned and the hæmolysing strength of sodium chloride solutions determined. The hydrogen ion concentration in each instance was calculated. It was observed that normal blood treated with pure carbon monoxide gas showed no increase in fragility of the red blood cells, but that there was a tendency to increased fragility when illuminating gas and automobile exhaust gas were used. The hydrogen ion concentration of the blood remained unaltered.

The Effects of Lead on the Vision.

FRANK G. PEDLEY (*Journal of Industrial Hygiene*, December, 1930) discusses the question of the incidence of eye affections in lead poisoning. The experience of observers in different countries appears to vary considerably in this respect. The author describes five cases which have come under his personal observation, in which eye lesions were associated with lead poisoning or evidence of the ingestion or inhalation of lead during work. Of the lesions two were optic atrophy, one neuroretinitis, one probable retrobulbar neuritis, and one subhyaloid hæmorrhage. In the opinion of the author there is considerable doubt as to the causation of any of these eye lesions by lead. Mere association of two disorders is no proof of a causal relationship. The case of subhyaloid hæmorrhage is described in detail.

Illness Among Wage-Earning Adults.

DEAN K. BRUNDAGE (*Journal of Industrial Hygiene*, November and December, 1930) has analysed the available statistics of morbidity for groups of industrial workers in the United States of America over a period of eight years to 1928. It was found that respiratory diseases caused nearly one-half of all disabilities on account of sickness. Digestive diseases formed the next group of importance. Contagious and infectious diseases caused only 3% of the cases. The duration of incapacitation per case increased with the age of the worker. This was more pronounced after the age of 50. Female workers were found to be absent through illness much more frequently than males, especially in sickness of short duration. Southern European workers appeared to be more liable to respiratory disease than northern and central Europeans and natives of America. Married women suffered more sickness than single women. The excessive use of alcohol was most pronounced among men doing heavy and disagreeable work. Those who find themselves unfitted physically to the nature of special occupations, tend to leave those occupations, thereby aiding in the process of selection. High rates of illness, especially of respiratory disability, were found among gold-miners, granite-cutters, coalminers and cement plant employees. A high rate of pneumonia was found among men in certain departments of the iron and steel industry. Influenza was very prevalent in all the above-mentioned industries.

The Asthenobiosis Theory.

B. A. R. GATER (*The Malayan Medical Journal*, December, 1930) mentions Roubaud's asthenobiosis theory and discusses the possibility of its applicability to mosquito breeding in Malaya. Roubaud has noted that when adult mosquitoes are plentiful larvæ are scanty and *vice versa*. According to Roubaud, larvæ in great numbers are found only in small collections of water; they are thus constantly poisoned by the ingestion of their own excreta and often fail to reach maturity. On the other hand, the waste products in larger bodies of water are not in sufficient concentration to cause damage to mosquito larvæ, most of which then reach maturity. Roubaud concludes that a conception of the numbers of anopheline mosquitoes in a locality can be obtained only by a survey of adults rather than larvæ. The author investigated his statistics with a view to testing Roubaud's theory. His investigations appeared to lend support to the view that the numbers of adult mosquitoes and the numbers of larvæ are in inverse ratio. He further noted that when larvæ were plentiful, they were found in small pools, and when they were scarce, they were found in drains, wells and silt pits.

Siliceous Spicules and Animal Tissues.

RALPH G. MILLS (*American Journal of Hygiene*, January, 1931), in an attempt to prove the solubility of silica in the tissues of the body, obtained spicules of a fresh water sponge, *Spongilla fragilis*, which were known to be of the same composition as opal containing 18·3% of silicon dioxide, and injected suspensions of these spicules into the lung substance of a dog and the muscle substance of the same dog and other laboratory animals. Three of the animals died after considerable time had elapsed, and the others were killed at intervals extending up to 472 days. In the lung of the dog, in the region of the inoculation, were found scattered regions of fibrosis and interstitial pneumonitis with collapse. The regions of the intramuscular injections in all animals were examined microscopically. It was found that the spicules had travelled widely in the bodies of the subjects. These were recovered by digestion of organs and flesh with nitric acid. Considerable alteration in structure of the spicules was found, the pointed tips being lost and in their places appeared the sharp edges of an eroded cylinder. This confirms the assumption that siliceous particles are converted into the colloidal state in the organism, and as such exert a fibroplastic influence on the lungs of exposed people.

The Bacteriological Examination of Water.

A. J. SALLE (*Journal of Bacteriology*, December, 1930), in presenting a complete system for the bacteriological examination of water, believes that the method, as well as limiting atypical strains to a minimum, will prove simple and will effect a saving in time and materials. Symbiotic conditions resulting in the production of acid and gas and sporing organisms, anaerobic and aerobic, are the three principal causes of difficulty in the accurate estimation of the colon group. The use of dyes in media is recommended to discriminate between these groups. Of these crystal violet is found to be the most satisfactory, 21 cubic centimetres of a one in 5,000 solution being added to 2,000 cubic centimetres of peptone broth. This medium limits the production of gas in practically all samples to members of the coli-aerogenes group. To differentiate between *Bacillus coli* and *Bacillus aerogenes*, an agar dye differential medium is described, containing erythrosine, methylene blue and brom-cresol purple. Results of water examinations are given in detail, showing the advantage in accuracy, simplicity and saving of time gained by the method described.

Special Articles on Diagnosis.

(Contributed by Request.)

XLIX.

MALNUTRITION IN CHILDREN.

IT is the usual experience of those who have spent some years in general practice and as physicians in out-patient departments in public hospitals, that a large number of children who are brought for treatment have some comparatively commonplace disorder; the "interesting cases" are proportionately few. Nevertheless, some of these disorders frequently present difficulties in diagnosis and may be a source of considerable trouble in practice. Malnutrition is one of the commonest of these conditions.

The term malnutrition actually implies a failure of the individual to make normal progress in health and growth resultant upon insufficient or improper food and defective hygiene. The problems involved in the investigation of such a condition are many, and much important work has been done on the subject during recent years. McCarrison remarks:

> When physicians learn to apply the principles which the newer knowledge of nutrition has to impart, when they know what malnutrition means, when they look upon it as they now look upon sepsis and learn to avoid the one as they now avoid the other, then will this knowledge do for medicine what asepsis has done for surgery.

In this article, however, the term is used in a wider sense, and is regarded as synonymous with such other terms as atrophy, marasmus and wasting, in which the main clinical characteristic, in a greater or less degree, is loss of weight, and in the production of which infection and organic disease may also play a part.

In the first place, it may be said that the actual diagnosis of a state of a minor degree of malnutrition in infants rests essentially on regular weighing; without this, the amount and the rate of the wasting cannot be ascertained with any degree of accuracy. In the more advanced degrees the clinical picture is familiar; the features are pinched, eyes sunken, and there is more or less anæmia; the skin loses its elasticity and the extremities tend to be cold; the fontanelle is depressed and there is a flabbiness of the muscles and laxity of the joints; the child is irritable and sleeps badly. In older children the diagnosis is evident from the history of loss of weight or failure to gain, and from the symptoms and general appearance. Having arrived at a diagnosis of a state of malnutrition, the real difficulty then begins, namely, the investigation and evaluation of the symptoms which will enable one to make a definite diagnosis of the origin of the malnutrition; the subject will accordingly be approached from this point of view.

It will be convenient to consider, first, malnutrition in infants and, secondly, malnutrition in older children.

Malnutrition in Infants.

The majority of cases of malnutrition in infancy are due to improper feeding. The error may be associated with the quantity of food ingested, or it may be a qualitative one resulting from an ill-balanced mixture of the food constituents. Certain clinical symptoms are frequently associated with these different conditions and are helpful in arriving at a diagnosis.

Underfeeding.

In regard to the quantitative errors, one has first to consider the question of underfeeding. This may result simply from an insufficient supply either of breast milk or of artificial food. In breast-fed children the error can be detected by test feeds, and in those who are artificially fed, by estimating the caloric value of the feeds or the amount of food ingested per pound of body weight—a simple and useful method—and comparing these with normal standards. In other instances of underfeeding the available food may be quite sufficient, but there may be a deficit in the amount ingested by the infant. This may happen in several ways. There may be deformity, retraction or cracking of the nipple or an inefficient action of the teat of the bottle. But far more commonly the fault lies with the child, from local conditions in the mouth, such as hare-lip, cleft-palate, facial paralysis or stomatitis; from prematurity, the infant being unable to draw the breast efficiently (in these cases, too, the power of digestion, and possibly of assimilation also, is feeble, and is a factor which helps in the production of a state of malnutrition); from nasal obstruction, which leads to difficulty in sucking and the ingestion of air (*vide infra*); from restlessness and nervous irritability ("nervous unrest") on the part of the child, frequently associated with a nervous temperament in the mother. In this condition and also when there is an insufficient quantity of milk available, air swallowing, or aerophagy, commonly occurs. The underfed infant, being left at the breast for a longer time than is necessary to deplete the diminished supply, tends to swallow air; in the nervous infant the act of sucking is irregular, rapid and frequently interrupted, and the feed tends to be gulped down with a considerable quantity of air. Some of this air is afterwards regurgitated, probably with varying amounts of the food; a portion of it may pass into the duodenum, causing an increased peristalsis of the bowel and the passage of frequent motions with flatus. The clinical picture of dyspepsia thus ensues which may create the impression that the infant is being overfed. Prolonged underfeeding may, however, result in loss of weight with constipation.

Overfeeding.

In regard to overfeeding, the condition is more common in artificially fed infants, though not infrequent in the breast-fed, especially in the early months. The symptoms at first are loose, frequent motions of good colour, regurgitation of unaltered milk, and an unusual gain in weight. Later, definite diarrhœa with the passage of frequent green motions and reddening of the skin of the buttocks, colic and loss of weight ensue. The condition is more commonly associated with too frequent feedings than with an excessive amount of food taken at longer and regular intervals.

Qualitative Errors in Feeding.

Passing now to the qualitative errors in feeding, it may be noted that the dyspepsia and associated malnutrition that result from excessive amounts or lack of proportion of the individual food constituents are less common than similar conditions arising from simple overfeeding as described above; in other words, the digestion of all the food constituents is impaired rather than of the fat or sugar alone. Further, the disproportion of the individual food elements may be only relative to the digestive powers of the particular infant, some children being intolerant of even normal proportions of fat or sugar in the food. An examination of the stools often gives some help as to the nature of the error in these cases; when fat is in excess, they tend to be large and of a greenish-yellow, oily appearance and containing an excess of mucus. In other instances, especially that associated with the giving of too much cow's milk with insufficient carbohydrate, the stools are unusually pale, crumbly and constipated. In the condition known as cœliac disease normal fat-splitting occurs, but there is a failure of fat absorption. Clinically there is marked wasting, often disproportionately greater in the gluteal region, enlargement of the abdomen, and the passage of large, offensive, pale-coloured motions, often referred to as "putty-like." When carbohydrate is in excess, the stools tend to be acid, frothy and watery, and associated with much flatulence and colic. Finally, in regard to qualitative errors, it should be mentioned that, apart from the well established clinical conditions associated with avitaminosis, minor degrees of malnutrition may arise from lack of essential vitamins in an otherwise well balanced and satisfactory food.

Infective Conditions.

The part played by infection and constitutional or organic conditions in the production of malnutrition will be considered in more detail in regard to older children.

It will be appropriate, however, to mention some of these conditions which are commonly met with in infants and young children. In latent empyema the onset is insidious and the illness assumes an indefinite course following upon some previous pulmonary trouble; there is often marked wasting and pallor. Chronic pyelitis is frequently associated with loss of weight and an indefinite history of ill-health. Middle ear infections may be associated clinically with vomiting, diarrhœa, rise in temperature and emaciation, though symptoms directing attention to the actual source of the trouble may be wanting. Loss of weight is a common accompaniment of erythrœdema (pink disease). The history of the onset of this condition is probably as characteristic as any other of its features. There is almost invariably a history that the child who, up to a short time previously, had been healthy and active, becomes fretful and irritable, shows no inclination to sit up and play or move about, and either refuses food or is difficult to feed, hence the loss of weight; the child is restless at night, perspires freely and shows a papular rash on the body; there is difficulty in holding up the head and frequently an assumption of contortionist attitudes whilst at rest or asleep (muscular hypotonia). Congenital pyloric stenosis is frequently associated with loss of weight; characteristic features of the condition are its much more frequent occurrence in male infants, vomiting of a projectile type and usually accompanied by constipation, and the detection of visible peristaltic waves.

Malnutrition in Older Children.

The problem of malnutrition in the older child is one which frequently has to be dealt with and which is often beset with difficulties. The child is brought for treatment with a history of failure to thrive, and advice is sought on this score alone. There are certain symptoms, such as stationary or gradual loss of weight, languor, anorexia, and pallor, which are common to most of these children, whatever the main underlying ætiological factor may be. Some of the more important conditions associated with a state of malnutrition in these children will be considered.

Chronic Naso-Pharyngitis.

The chronic naso-pharyngitis group comprises mainly the children with enlarged and infected tonsils and adenoids who are so familiar to us all. The effect on the general health and growth may be marked, both by reason of toxic absorption and the fact that gross enlargement of these structures or the attendant inflammation and hypersecretion may interfere with proper breathing and oxygenation. Frequent colds and cough and probably recurring tonsillitis, with enlargement of the cervical glands, are common accompaniments. Chronic naso-pharyngitis is a common cause of abdominal pain in children and the frequent occurrence of albuminuria and nephritis with the condition must always be kept in mind. Every physician is familiar with the type of child who is malnourished and pale, with infected tonsils and adenoids, in whom the urine on repeated examination shows definite albuminuria which disappears after the naso-pharyngeal condition has been dealt with. In others again a true nephritis occurs. Nasal sinusitis is commonly present in cases of this kind and if overlooked may account for the persistence of symptoms after tonsils and adenoids have been removed.

Chronic Infections of the Lungs.

Chronic infections of the lung, which include unresolved pneumonia, fibrosis and bronchiectasis, arise as a sequel to previous attacks of pneumonia, and are frequently aggravated by attacks of bronchitis associated with chronic infective conditions of the naso-pharynx and nasal sinuses; the possibility of a foreign body as an ætiological factor in these cases must be kept in mind. In the early stages cough, which is frequently paroxysmal and hacking in character, malnutrition and dyspnœa on exertion, with cyanosis, are the main symptoms. Physical signs are frequently uncertain, though there may be an impaired percussion note over the affected base of the lung, a diminution of breath sounds over this area, and either a complete absence of adventitious sounds or the presence of râles. Later, when the process advances, there is evidence of flattening of the chest wall, displacement of the mediastinal contents and clubbing of the fingers. The disease is chronic and comparatively afebrile throughout the greater part of its course.

It is in these cases that the question of the possibility of pulmonary tuberculosis arises, and the parents are particularly anxious to know whether or not the child has "consumption." In this regard it must be emphasized at the outset that chronic pulmonary tuberculosis is rare in childhood, at any rate during the first ten years. The recurring upper respiratory infections, the malnutrition, cough and the suspicious but indefinite X ray appearances which are commonly present in chronic lung infections, may all suggest such a condition, but definite confirmatory evidence must be awaited. Tuberculosis of the mediastinal glands and *hilum tuberculosis* are in an entirely different category; they constitute a large percentage of all cases of intrathoracic tuberculosis in children and are always a menace to the child. The difficulty in diagnosing this condition from chronic lung infections is often great. The history is often a help; in tuberculosis a history of contact with other tuberculous patients is common, whilst in chronic lung infections a history of any familial tendency or of a similar condition in other members of the family is wanting. In the latter cases there is a frequent history of previous attacks of pneumonia. Cyanosis and clubbing of the fingers are more common in the chronic lung infections. Dyspnœa occurs in both conditions, though it probably interferes less with the activity of the child in the non-tuberculous cases. As regards the von Pirquet test, it is commonly held that a positive reaction is of little value after infancy; failure to react, however, is in favour of non-tuberculous lesions. Frequent sputum tests should, of course, be carried out. X ray examinations are of value, especially in the bronchiectatic conditions, where diaphragmatic signs and basal shadows are helpful; in possible tuberculous lesions, however, they often lack satisfactory evidence.

Rheumatism.

The possibility of rheumatism has always to be considered in a child who exhibits symptoms of debility and malnutrition. In the examination of this type of child one must be on the alert for early manifestations of rheumatism, especially as the problems of heart disease in childhood and rheumatism are so intimately associated. A history of being easily tired is common in these children. They are often anæmic; in this regard it should be noted that in children primary anæmias are much less common than anæmia which is associated with other diseases, such as rheumatism. There is frequently a history of "growing pains," which call for special care, as they so commonly represent muscular manifestations of rheumatism. Their distribution may be general, with special selection for the limbs, or they may be peculiarly localized. Stiff neck not infrequently belongs to this category. Chorea, manifested in a minor degree by fidgetiness and restlessness and perhaps a change in the disposition of the child, is a common accompaniment. Obstinate headache is frequent in the rheumatic child, also recurrent attacks of tonsillitis and abdominal pain. In regard to heart signs, it should be emphasized that in many instances the onset of rheumatic heart disease is insidious, without any history of any antecedent illness. Persistent tachycardia, especially if occurring with other rheumatic manifestations, is sometimes an early warning; an apical systolic murmur, with definite enlargement of the heart, is highly suspicious, and a pericardial friction rub or mitral diastolic murmur is definite evidence of cardiac invasion.

Chronic Dyspepsia.

Chronic dyspepsia may be the outcome of overfeeding or irregular and frequent meals, with a probable over-indulgence in carbohydrates, though it is undoubtedly more prone to occur in a certain type of child, sometimes referred to as the nervous child. Certainly, nervous symptoms are common in these children and sometimes dominate the picture. The dietetic errors mentioned above

are likely to be responsible for the beginning of the trouble, with indigestion and subsequent anorexia and loss of weight. The anxious parent then probably plies the child, against its will, with fattening foods, such as milk, eggs, butter and, more often than not, cod liver oil, which aggravate the condition; relative excess of one particular food constituent, however, is probably less common a source of trouble in older children than in infants and young children. Malnutrition ensues, or in its stead there may be a generalized atonic condition of the muscles giving rise, with the aid of an accompanying flatulence, to an enlargement of the abdomen. Constipation may be present or there may be irregular, abnormal stools containing undigested food and at times much mucus; intestinal worms may be associated with the latter condition. The child is pale and debilitated, with dark rings under the eyes, a coated tongue, and probably complains of slight or colicky abdominal pains, especially after food. Nervous symptoms are manifested by easily induced fatigue, disturbed sleep, probably with night terrors, irritability and headache. The child's general appearance, with wasting and prominence of the abdomen, may arouse suspicion of tuberculous peritonitis. The absence of free fluid or enlarged glands in the abdomen are distinguishing features.

Loss of weight is, of course, a common accompaniment of diabetes, but other associated symptoms and an examination of the urine, with other well known tests, establish the diagnosis. It is advisable to mention in this respect, however, that an early symptom of the condition is frequency of micturition, including enuresis, which is another of the outstanding "commonplace disorders" of children; a routine examination of the urine for sugar in all these children may occasionally reap its reward.

Conclusion.

In conclusion, one may summarize by stating that the diagnosis of malnutrition in children entails, first, a thorough examination to exclude organic disease and, secondly, a careful investigation of the dietetic and hygienic *régime* of the child.

LAURENCE HUGHES, M.D. (Sydney),
Honorary Assistant Physician, Royal Prince Alfred Hospital; Honorary Assistant Physician, Royal Alexandra Hospital for Children.

British Medical Association News.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Hospital for the Insane, Claremont, on March 22, 1931, DR. H. BALDWIN GILL, the President, in the chair.

Financial Statements.

The Honorary Treasurer, Dr. A. Syme Johnson, presented the balance sheet and financial report for the twelve months. These were received and adopted. The financial statement is appended.

President's Address and Annual Report.

In accordance with the custom, the retiring President combined his address with the report of the Council.

Membership of Branch.

The membership of the Branch has increased from 244 to 257.

Resignation of Dr. Roberta Jull.

It is with much regret the Council received the resignation of Dr. Jull. As Dr. Jull was one of the foundation members of the Branch and has already done excellent work, including many years on the Senate of the University, the Council voted her an honorary member of the Branch.

Meetings of Branch.

The meetings of the Branch have been well maintained. There were nine general meetings, with an average attendance of fifty-three, compared with thirty-three last year.

These meetings were full of interest, including a clinical evening arranged by Dr. Anderson at the Perth Hospital, also one at the Children's Hospital, Perth.

Interesting papers were read by Dr. R. G. Williams, Dr. Le Souef, Dr. Couch, Dr. Blackall and Dr. Hunt. At various meetings interesting cases were shown.

Over 100 members were present at the Lyceum Theatre for a meeting when the Harvey and Canti films were shown, these being kindly loaned by Dr. Rowden White and Dr. Julian Smith, of Melbourne, interesting addresses being given on these subjects respectively by Dr. Webster and Dr. Le Souef.

A general meeting was held during Post-Graduate Week; this was well attended and the interesting addresses at that meeting included those by Dr. Konrad Hiller and Mr. Gordon Shaw, who came specially from Melbourne for this week.

Dr. Mervyn Archdall, Editor of THE MEDICAL JOURNAL OF AUSTRALIA, gave a very interesting address to the last general meeting, and as an outcome of this meeting it is hoped that during the ensuing year better reports of the Branch will be published in the journal and generally a greater interest taken in its publication. It was also arranged to publish, probably quarterly, a short account of proceedings of the Council.

Annual Dinner.

The annual dinner at the close of Post-Graduate Week was a great success, there being over seventy present.

Council Meetings.

The council held ten meetings, with an average attendance of eight during the year, the work being particularly heavy.

Australasian Medical Congress (British Medical Association), 1932.

The Branch's recommendation for the appointment of Dr. D. D. Paton as President of Congress has been confirmed by the Federal Committee.

Dr. Holland has been appointed Honorary Treasurer of Congress, Dr. Ainslie and Dr. Le Souef, Honorary Secretaries, and the future of the congress is now in the hands of the Congress Committee, who are making arrangements well ahead for the congress to be a success.

Anatomy Act.

The Council secured the cooperation of the Dental Association and the University, and after deputations to both the last and the present Government, and with the excellent assistance of Dr. Atkinson, an *Anatomy Act* was passed by Parliament this year. The thanks of the profession are also due to Dr. J. J. Holland, who first instigated the matter.

The University Council has been approached to consider housing a dissecting room in the University buildings.

Workers' Compensation Act.

I desire to especially mention the excellent work carried out by the Special Medical Committee consisting of Dr. T. L. Anderson, Dr. Holland and Dr. Juett, and also Dr. Hadley, who acted while Dr. Juett was away. This committee was originally formed in 1927 and to date they have considered 773 cases. There are many difficulties and anomalies in the present act, and it is proposed by the Government at an early date to amend the act. Your Council has offered assistance to the Government in this direction and a scheme is being considered to endeavour to get the working placed on a better footing.

Hospital Bill.

During the year a Hospital Bill has been passed so as to obtain funds by further tax on the community to main-

tain the public hospitals. Owing to the present financial depression, the honorary staff in public hospitals are asked to do an increased amount of honorary work and as well are taxed as members of the community under this bill. Your Council made an urgent appeal to the Premier to exempt doctors in honorary positions in public hospitals being taxed under this bill, but were unsuccessful. The whole question of honorary work should be seriously considered in the coming year.

Medical Service to Farmers.

A special bill to relieve the farmers at present was submitted to Parliament and by able representation to a parliamentary select committee by Dr. Paton and Dr. Aberdeen, the bill was modified, permitting all medical practitioners to be entitled to their share with other creditors.

Model Lodge Agreement.

The friendly societies have arranged to retain on doctors' lists unemployed married members and unemployed single members with dependants, and are contributing these members' subscriptions from the death and funeral benefits fund and by a special levy on members who are not unemployed, and successfully appealed to this Association that the doctors contribute 10% of the amount of their quarterly cheques so that these unemployed can still remain and be paid for on the doctors' lists. I am quite certain that this action of the members of the Branch will reflect credit to them in the future.

London Election of Members of Council.

Dr. T. P. Dunhill was renominated this year by this Branch, also South Australia and Victoria, and for the general meeting to be held at Eastbourne next July Dr. Crisp and Dr. Cuthbert were both elected to represent the Branch.

Parking of Cars.

The drastic regulations for the parking of cars, especially in St. George's Terrace, was noted, and the inspector controlling the Traffic Department was interviewed by the Vice-President and myself on separate occasions, when we had his assurance that doctors' care would not be restricted under these regulations.

Post-Graduate Week.

A most successful Post-Graduate Week was held from July 14 to 19. This was arranged by the Post-Graduate Committee appointed on April 16, 1930, by the general meeting consisting of Dr. Fred Clark, Dr. Crisp, Dr. Farmer, Dr. Hislop, Dr. G. A. Thompson, the President and Honorary Secretary, *ex officio*. Dr. Farmer and Dr. Hislop were appointed joint honorary secretaries. Dr. Konrad Hiller and Mr. Gordon Shaw, of Melbourne, accepted the Committee's invitation to attend this Post-Graduate Week.

You will tonight be asked to select a fresh committee, as the Council recommend that this be a permanent committee under the auspices of this Association.

Medical Benevolent Association of Western Australia.

Under the auspices of this Association, this was inaugurated in June, 1929, the committee consisting of Dr. Day, Dr. Le Souef and Dr. Maitland, with the President (Dr. Holland) and the Honorary Secretary, *ex officio*. Excellent work has been done by Dr. Holland and later on he will be asked to present a report of this fund.

Library Committee.

At the request of the Council, the Perth Hospital has granted two rooms in the old X ray department; the work of converting these into a library is now in the hands of the Library Committee, whose report will be read later this evening.

Royal Australasian College of Surgeons.

The primary fellowship examination for the Fellowship of the Royal College of Surgeons of England will be held this year, and members have been advised of it.

Federal Committee.

The new constitution has been submitted to and approved of by the Branch, and should be in working order at an early date. The Branch's thanks are due to Dr. Hadley and Dr. Paton, Federal Representatives, for their work during the year.

Auditors.

You will be asked to elect two auditors for the ensuing year. Dr. Randell and Dr. Craig were auditors for the year just closed and the Association's thanks are due to them for the manner in which they carried out their duties.

Office Bearers.

I declare that the following office-bearers have been elected for the year 1931:

President: Dr. H. J. Gray.
Vice-President: Dr. Donald Smith.
Ex-President: Dr. H. B. Gill.
Honorary Treasurer: Dr. A. Syme Johnson.
Honorary Secretary: Dr. L. E. Le Souef.
Members of Council (3): Dr. Aberdeen, Dr. Clement, Dr. Holland.

On behalf of the Council and the Branch I have much pleasure in tendering to Dr. Bentley a very hearty vote of thanks for his continued generosity in asking the Branch to hold the annual meeting at Claremont, and for the splendid way in which he has entertained us tonight.

Before I vacate the chair I would like to thank the Council and the Association for the loyal support they have given me during the year as President.

Dr. H. J. Gray, the President-Elect, is at present in the eastern States and he has written to me expressing inability to attend tonight's meeting; therefore, I have not the pleasure of handing the chair over to him. I have the honour, however, to call upon Dr. Donald Smith, the Vice-President, to take the chair in the absence of the President.

Election of Auditors.

Dr. A. E. Randell and Dr. S. E. Craig were unanimously elected auditors for the ensuing twelve months.

Librarians' Report.

The Librarians' report was read by Dr. J. Gordon Hislop. After much discussion it was resolved that the library be housed at the Perth Hospital pending the formation of headquarters for the Branch.

Ætiological Factors in Mental Disorder.

DR. R. G. WILLIAMS read a paper entitled: "The Influence of Ætiological Factors upon the Prognosis and Treatment of Mental Disorders." This paper will be published in a subsequent issue.

Medical Benevolent Fund.

DR. J. J. HOLLAND submitted a report on the medical Benevolent Fund, which was received and adopted. He pointed out that the credit balance at the end of the financial year was £149 12s. 10d. There were eighty-one subscribers of £1 1s. each and seven members had paid life subscriptions of £10 10s. Dr. G. B. G. Maitland was appointed Honorary Secretary and Treasurer.

Post-Graduate Work Committee.

DR. J. G. HISLOP submitted the proposed constitution and rules for the Perth Permanent Post-Graduate Committee. On the motion of Dr. R. D. McK. Hall, seconded by Dr. J. P. Ainslie, these were adopted.

The constitution of the Committee is as follows:

1. The name of the Committee shall be the Perth Permanent Post-Graduate Committee (founded by the Western Australian Branch, British Medical Association, May, 1930).

2. The objects of the Committee shall be:

(*a*) To promote and develop facilities for post-graduate study by arranging and conducting: (i) Courses of clinical instruction in the various branches of medicine in Western Australia, (ii) lecture courses of instruction in recent advances in medicine, (iii) tutorial lectures for candidates for higher medical degrees.

(*b*) To cooperate with scientific bodies having similar or allied objects.

(*c*) To establish a permanent fund for the continuance of post-graduate work in Western Australia.

(*d*) To grant sums of money out of the funds of the Committee for the promotion of the medical and allied sciences in such a manner as may from time to time be determined.

(*e*) To engage in any activities that the Committee deems advisable for the furtherance of post-graduate work and instruction in the various branches of medicine.

3. The funds of the Committee shall be vested in two trustees, who shall be members of the Committee and shall be appointed by the Committee. The income and property of the Committee, from whatever source derived, shall be applied solely towards the promotion of the objects as set forth in Clause 2.

4. The Committee shall consist of the following: A surgeon, a physician, a gynæcologist or obstetrician, a pædiatrist, a member of special branches, a general practitioner, one representative elected by the Council of the Branch. The chairman to be elected annually by the Committee. Two of the Committee to be reelected annually at the November meeting of the Western Australian Branch of the British Medical Association in the order of: Pædiatrist and general practitioner in 1931, surgeon and gynæcologist in 1932, physician and special branches in 1933.

5. The office-bearers of the Committee shall be: (*a*) Chairman, (*b*) secretary, (*c*) treasurer. In the absence of the chairman, the members present shall elect their chairman for that meeting.

The rules of the Committee are as follows:

1. The Committee shall have the power to appoint sub-committees.

2. Two of Clause 4 to be reelected annually at the annual meeting of the Western Australian Branch of the British Medical Association, but can be eligible for reelection.

3. Committee shall have the power to coopt. The coopted members shall not hold office for more than one year.

4. If any member of the Committee shall be absent without leave from three consecutive meetings or alternatively more than half of the total in any one year, the Committee shall have power to declare his position vacant.

5. The Committee by an affirmative vote of three-quarters of its members shall have power to terminate the appointment of any member of the Committee.

BRITISH MEDICAL ASSOCIATION, WESTERN AUSTRALIAN BRANCH.

Balance Sheet for Year ended December 31, 1930.

RECEIPTS.	£ s. d.	£ s. d.
December 31, 1929—		
Bank of New South Wales—		
Current Account	211 17 8	
Cash on Hand	12 11 0	
		224 8 8
£500 Commonwealth Treasury Bonds, 5½%, 1933	500 0 0	
£250 Commonwealth Treasury Bonds, 6%, 1937	250 0 0	
£200 Commonwealth Treasury Bonds, 5½%, 1934	200 0 0	
£200 Western Australian Government Bonds, 6%	200 0 0	
300 Australasian Medical Publishing Company, Limited Debentures, 10%	300 0 0	
Fixed Deposit, Bank of New South Wales, No.	200 0 0	
Fixed Deposit, Bank of New South Wales, No.	658 13 10	
		2,308 13 10
Interest, Fixed Deposit, £200, 5%	15 0 0	
Interest, Fixed Deposit, £658 13 10	32 18 6	
		47 18 6
Interest, Commonwealth Loan, £500, 1933, 5½%	26 5 0	
Interest Commonwealth Loan, £200, 1934, 5½%	9 18 9	
Interest, Commonwealth Loan, £250, 1937, 6%	15 0 0	
		51 3 9
Interest, Western Australian Government Bonds, £200, 5%		12 0 0
Australasian Medical Publishing Company, Limited, £200		18 10 0
Annual Subscriptions		901 1 2
Underwriters: Refund Additional Clerical Work, *Workers' Compensation Act*		25 0 0
		£3,588 15 11

EXPENDITURE.	£ s. d.	£ s. d.
Printing	32 7 9	
Sundry Expenses	3 7 0	
Postages *et cetera*	59 7 3	
Assistant Secretary's Salary	72 18 4	
Additional Clerical Assistance	26 3 5	
London Office, *The British Medical Journal*	329 6 0	
THE MEDICAL JOURNAL OF AUSTRALIA	314 4 10	
Library Account	28 14 0	
Harvey and Canti Films: Expenses Showing and Transport	15 4 5	
Dinner Fund (Credit Balance now £2 12 3)	11 11 6	
Subscriptions refunded to Victorian Branch	4 1 0	
		897 5 6
Funds on Hand, December 31, 1930—		
£500 Commonwealth Treasury Bonds, 5½%, 1933		500 0 0
£250 Commonwealth Treasury Bonds, 6%, 1937		250 0 0
£200 Commonwealth Treasury Bonds, 5½%, 1934		200 0 0
£200 Western Australian Government Bonds, 6%		200 0 0
£300 Australasian Medical Publishing Company, Limited, 10%		300 0 0
Fixed Deposits, Bank of New South Wales, due January 3, 1932		200 0 0
Fixed Deposits, Bank of New South Wales, due April 18, 1931		658 13 10
Bank of New South Wales, Hay Street, Branch, Current Account		382 16 7
		£3,588 15 11

We hereby certify that this Statement of Receipts and Expenditure has been audited and found correct.

(*Signed*) A. SYME JOHNSON, Honorary Treasurer.

(*Signed*) ALLAN E. RANDELL, Honorary Auditor.

(*Signed*) S. E. CRAIG, Honorary Auditor.

6. The duties of the Secretary shall be: (*a*) To issue notices of meetings, (*b*) to take charge of all papers, (*c*) to conduct all correspondence, (*d*) to record in the minute book all proceedings of the Committee, (*e*) to perform such other duties as are delegated to him by the Committee.

7. The duties of the Treasurer shall be: (*a*) To receive all moneys paid to the Committee, (*b*) to pay all accounts passed by the Committee, (*c*) to keep a regular account of receipts and expenditure, (*d*) to prepare an annual balance sheet, which, after being audited, shall be presented for adoption to the Committee at its first meeting in each year, (*e*) to make presentation to the Council of the Western Australian Branch of the British Medical Association.

8. All orders for payment shall be signed by the Chairman of the Committee or his substitute. All cheques shall be signed by the following (two of the following): The Chairman, the Treasurer and the Secretary.

9. The Committee shall meet ordinarily once a quarter, but may be summoned at any time by the Chairman or by any three members of the Committee. Notice of meeting shall be in writing, and four shall form a quorum.

10. The rules shall not be altered or amended unless one month's notice in writing shall have been given to each member and four of the members present at a duly summoned meeting shall be in favour of such alteration or amendment.

11. Any temporary vacancy occurring during the year can be filled by the Committee.

12. In future years elections shall be in November.

It was resolved that the Committee should be as follows:

Surgeon: Dr. F. Clark.
Physician: Dr. J. Gordon Hislop.
Gynæcologist or Obstetrician: Dr. G. A. Thompson.
Special Branches: Dr. A. W. Farmer.
Pædiatrist: Dr. L. G. Male.
General Practitioner: Dr. L. A. Hayward.
One representative to be elected by the Council.

Honorary Staffs of Public Hospitals.

A letter from Dr. R. H. Crisp dealing with the honorary staffs of public hospitals was read. It was resolved, on the motion of Dr. E. E. Moule, seconded by Dr. M. B. Johnston, that the matter should be discussed at a general meeting to be held as soon as possible.

Model Lodge Agreement.

Correspondence from friendly societies was read. In view of complaints from certain members that the spirit of the agreement was not being kept, Dr. D. P. Clement appealed to members to report immediately cases in which they had cause for complaint.

Parking of Motor Cars.

A member complained that he had been fined for parking his motor car outside his consulting rooms. It was decided to refer the matter to the Council.

Agenda Papers.

It was resolved, on the motion of Dr. R. D. McK. Hall, seconded by Dr. B. C. Cohen, that a short summary of practical interest be published at the foot of each agenda paper.

The Royal Army Medical Corps.

A letter was read from General Barber notifying vacancies in the Royal Army Medical Corps.

Vote of Thanks.

On the motion of Dr. J. Gordon Hislop, a vote of thanks was extended to the retiring Council.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Shiel, Ernest Richard Glenister, B.Sc., M.B., B.S., 1931 (Univ. Melbourne), Ballarat Base Hospital Ballarat.
Perl, Michal Mathias, M.B., B.S., 1931 (Univ. Melbourne), 88, Story Street, Parkville, N.2.
Morton, Lorimer Grant, M.B., B.S., 1931 (Univ. Melbourne), Geelong Hospital, Geelong.
Hughes, Montague Owen Kent, M.B., B.S., 1930 (Univ. Melbourne), Melbourne Hospital, Melbourne, C.1.
Alberry, Gordon Walter Fabian, M.B., B.S., 1931 (Univ. Melbourne), 163, Neerim Road, Glenhuntly, S.E.9.

The undermentioned have been elected members of the Queensland Branch of the British Medical Association:

Cohen, Royal Samuel, M.B., B.S., 1930 (Univ. Sydney), Mater Misericordiæ Hospital, Brisbane.
Farrell, John Patrick, M.B., B.S., 1917 (Univ. Melbourne), Sandgate, Queensland.

Correspondence.

BRANCH SUBSCRIPTIONS.

SIR: The annual subscription to the British Medical Association (Victoria)—£4 14s. 6d.—appears excessive to many members, and specially so in these times of stress.

I venture to suggest that the expenses of the branch can be reduced considerably in the following ways:

1. Cease the subscription to *The British Medical Journal*. Most of the copies of this journal find their way into the waste paper basket unopened. A synopsis of interesting articles could be made in your journal, and any member desiring *The British Medical Journal* could obtain it through the Association by special arrangement.

2. Cease paying "toll to Britain" by altering our title to "The Australian Medical Association." A precedent in this matter has been shown us by both Canada and South Africa. Besides, during the war our medical corps was known as "The Australian Medical Corps," not "British Medical."

3. Curtail the office expenses. Recently the Medical Agency, which has been conducted by the Association for a number of years, has been transferred to a private firm. This must mean that there is less work for the Victorian Branch office.

I understand that the Council of the Victorian Branch of the British Medical Association has been considering at least one of these suggestions for several months past. If members of the Council have any doubt as to how members of the Branch feel in regard to these matters, I would suggest that a plebescite of all members be taken with regard to the suggestions I have made.

Yours, etc.,
ARTHUR MORRIS.

120, Collins Street,
Melbourne,
May 21, 1931.

Obituary.

FREDERICK JOSEPH RICHARD CADE.

DR. A. J. PARK writes the following appreciation of the late Dr. Frederick Joseph Richard Cade:

I would like to pay my tribute of respect and appreciation in memory of the late Frederick Joseph Richard Cade, whose death occurred on May 16, 1931.

During the period of twenty years in which he practised his profession in Narrabri, a brotherly feeling existed between us and there was never a single occasion when that good fellowship was clouded by doubt or irritation. He was blessed with a wonderful nature, full of human kindness and sincerity. A physically strong man, he never spared himself in the work of his profession, and during the great influenza epidemic, when I was laid up and a "locum" could not be obtained, for three days he

carried out the work of my practice and his own and, I believe, had no sleep for three days and two nights.

As an anæsthetist he excelled, and although busy with his own practice, he would give anæsthetics as though it were the joy of his life, and one never had an anxious thought about his work in the team.

ALFRED FREDERICK STEELE SCOTT.

WE regret to announce the death of Dr. Alfred Frederick Steele Scott, which occurred at Gilberton, South Australia, on June 6, 1931.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING of the Senate of the University of Sydney was held on June 1, 1931.

Dr. E. A. Brearley was appointed Acting Lecturer in Ophthalmology from July 1 during the absence on leave of Dr. R. G. Waddy.

The Consul in charge of the Consulate-General of the Czechoslovak Republic presented to the University a Czechoslovak flag forwarded with the compliments of the Ministry of Education. This flag is to be used in connexion with the War Memorial Carillon of the University as the Senate may direct.

A tender was accepted for the erection and completion of the War Memorial Honour Roll in the Great Tower.

Honours.

BIRTHDAY HONOURS.

IN this year's birthday honours list appears the name of Dr. W. N. Robertson, C.B.E., of Brisbane. His Majesty the King has been pleased to confer on Dr. Robertson the honour of Companion of the Most Distinguished Order of St. Michael and St. George. Dr. Robertson is Vice-Chancellor of the University of Queensland. He has been a prominent member of the Queensland Branch of the British Medical Association for many years. He has served as representative of the Queensland Branch on the Federal Committee of the British Medical Association in Australia and was for several years Vice-Chairman of the Committee. He also for many years filled the position of Chairman of the Australasian Medical Publishing Company, Limited. The medical profession throughout Australia joins in offering Dr. Robertson its sincere congratulations.

Diary for the Month.

JUNE 16.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JUNE 23.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JUNE 24.—Victorian Branch, B.M.A.: Council.
JUNE 24.—South Australian Branch, B.M.A.: Annual Meeting.
JUNE 25.—New South Wales Branch, B.M.A.: Branch.
JUNE 26.—Queensland Branch, B.M.A.: Council.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

AUGATHELLA HOSPITAL, AUGATHELLA, QUEENSLAND: Medical Superintendent.

AUSTIN HOSPITAL FOR CHRONIC DISEASES, HEIDELBERG, VICTORIA: Junior Resident Medical Officer.

PERTH HOSPITAL, PERTH, WESTERN AUSTRALIA: Resident Radiologist, Resident Pathologist.

RENWICK HOSPITAL FOR INFANTS, SYDNEY, NEW SOUTH WALES: Honorary Physician.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members desiring to accept appointment in ANY COUNTRY HOSPITAL, are advised to submit a copy of their agreement to the Council before signing, in their own interests. Brisbane Associated Friendly Societies' Medical Institute. Mount Isa Hospital. Mount Isa Mines. Toowoomba Associated Friendly Societies' Medical Institute.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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